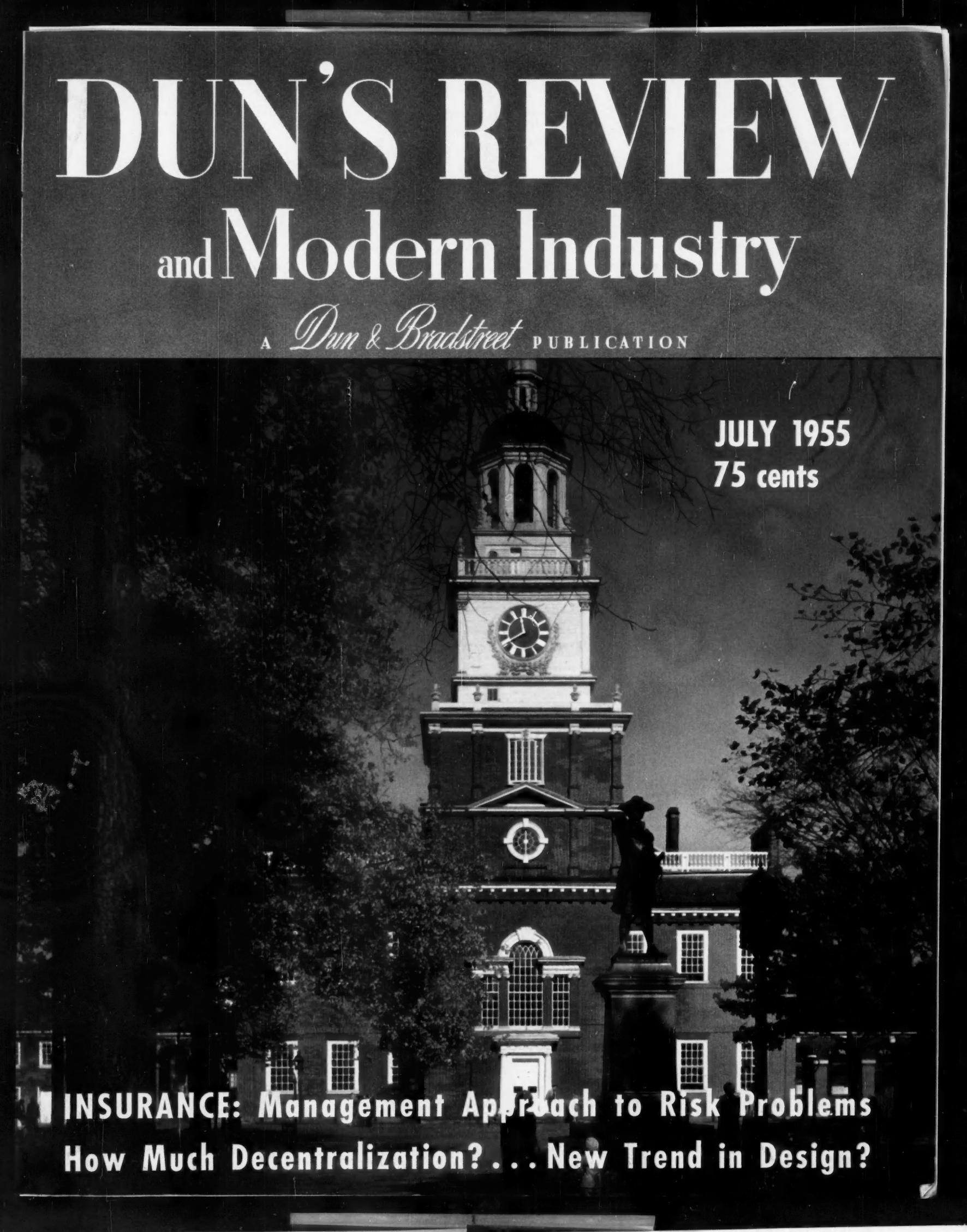


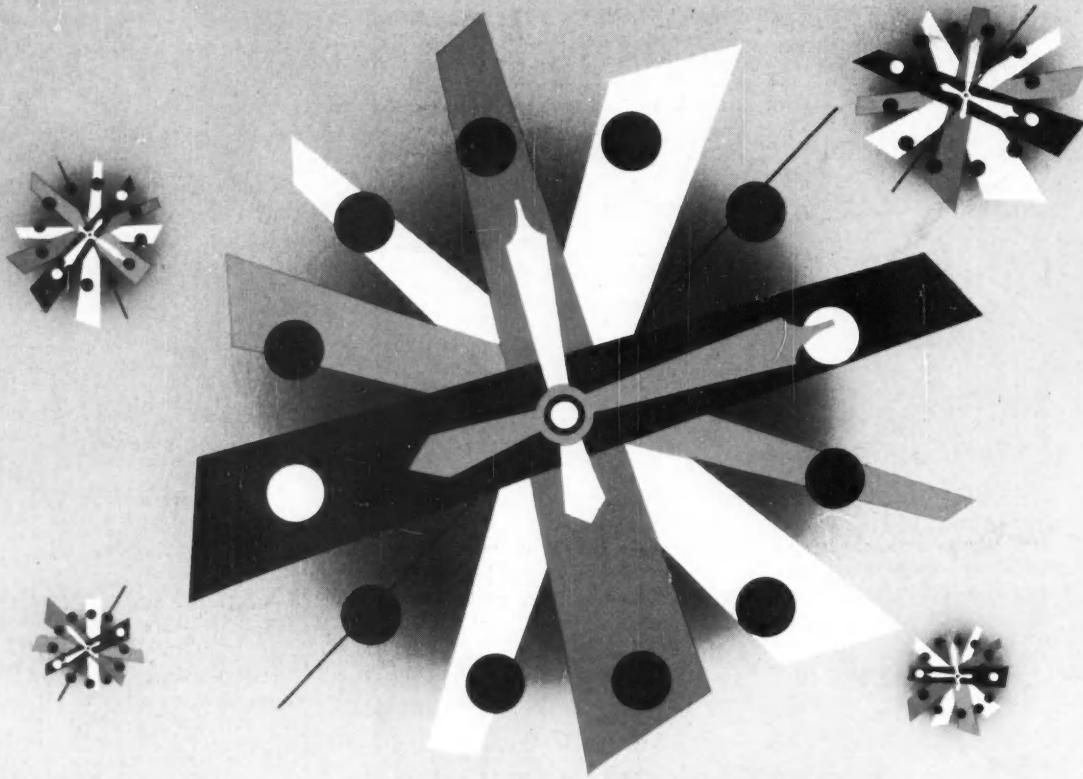
DUN'S REVIEW and Modern Industry

A *Dun & Bradstreet* PUBLICATION

JULY 1955
75 cents

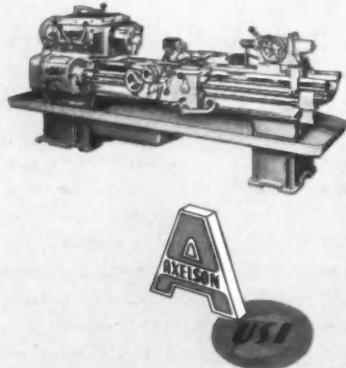


INSURANCE: Management Approach to Risk Problems
How Much Decentralization?... New Trend in Design?



don't kill it — take advantage of it

We have all been given an equal number of hours in every day to use in any way we see fit. We can kill time or take advantage of it. It can be an inexorable taskmaster or a valuable ally. We'd like you to know about a machine that can help you make the most of the costly hours between punch-in and punch-out. It's an Axelson lathe—one of the really fine machine tools built in America today. May we take the time to tell you about it?



AXELSON MANUFACTURING COMPANY

DIVISION OF U. S. INDUSTRIES, INC.

6160 S. BOYLE AVENUE, LOS ANGELES 58, CALIFORNIA

• Dealers in Principal Tool Centers of the U. S.



Some concrete facts about cement

Banks play an important part in America's cement industry. Here's how

Even though it's been through approximately 80 manufacturing processes and met some of the toughest specifications in U. S. industry, the cement being smoothed over above costs less than a penny a pound at the mill!

Concrete Money

American cement making became an established industry in the late 1800s. As the industry grew, banks helped

supply the money necessary to build America's new Stone Age. To this day the bankers help finance the quarrying of lime and procuring of many other raw materials required for cement manufacture. They supply funds for plant expansion and product development. On the retail side, bank loans frequently help hardware and building supply men . . . making it easy for you to buy cement by the sackful or carload.

Who Profits?

All of these loans add up to more than multimillion-dollar help to a vital industry. They illustrate clearly

that a competitive banking system, free to put money to work wherever and whenever opportunity for profit exists, is the most potent ally private enterprise can have.

This is so because men and women work wherever money works, and the fruits of their labor are a wider choice of fine products for all to enjoy.

The Chase Manhattan Bank, a leader in loans to American industry, is proud of banking's contribution to the progress of our country.

The Chase Manhattan Bank

HEAD OFFICE: 18 Pine Street, New York 15
(Member Federal Deposit Insurance Corporation)

A special message for hardware manufacturers

specify **IRIDITE®**

need a finish for protection—decoration—identification?

Specify Iridite . . . for corrosion protection during storage or use . . . for a firm and lasting base for paint . . . for extra quality and eye-appeal . . . for low cost color coding of finished parts.

ON ZINC AND CADMIUM you can get highly corrosion resistant finishes to meet any military or civilian specifications and ranging in appearance from olive drab through sparkling bright and dyed colors.

ON COPPER . . . Iridite brightens copper, keeps it tarnish-free; also lets you drastically cut the cost of copper-chrome plating by reducing the need for buffing.

ON ALUMINUM Iridite gives you a choice of natural aluminum, a golden yellow or dye colored finishes. No special racks. No high temperatures. No long immersion. Process in bulk.

ON MAGNESIUM Iridite provides a highly protective film in deepening shades of brown. No boiling, elaborate cleaning or long immersions.

AND IRIDITE IS EASY TO APPLY. Goes on at room temperature by dip, brush or spray. No electrolysis. No special equipment. No exhausts. No specially trained operators. Single dip for basic coatings. Double dip for dye colors. The protective Iridite coating is not a superimposed film, cannot flake, chip or peel.

WANT TO KNOW MORE? We'll gladly treat samples or send you complete data. Write direct or call in your Iridite Field Engineer. He's listed under "Plating Supplies" in your classified telephone book.

Iridite is approved under government specifications

ALLIED RESEARCH PRODUCTS
INCORPORATED

4004-06 E. MONUMENT STREET • BALTIMORE 5, MD

Manufacturers of Iridite Finishes for Corrosion Protection and Paint Systems
on Non-Ferrous Metals, A.R.P. Plating Chemicals.
WEST COAST LICENSEE: L. H. Butcher Co.



DUN'S REVIEW and Modern Industry

READING
AND
ROUTING
MEMORANDA



How Much Decentralization?..... 31

GEORGE F. SMITH
President, Johnson & Johnson Co.

This type of management philosophy has many adherents and it has proven itself many times. But there are boundaries beyond which it is best not to go without being keenly aware of possible disadvantages.

Effective Reports for Sound Decisions. 33

D. S. MOFFITT
Controller, The Connecticut Hard Rubber Co.

Whichever method of accounting and financial reporting is used, it must conform with the established financial goals of the enterprise. Here is a discussion of various types, advantages, and disadvantages.

New Trend in Design?..... 34

ANNESTA R. GARDNER
Industrial Editor

Straighter lines and sharper angles keynote many new products. It looks like a growing trend in both consumer and industrial products, and one that is good news to small producers as well as large.

Fewer Sales at Sixty..... 38

JAMES K. BLAKE
Marketing Editor

The salesman who slows down as he approaches retirement age poses a tough problem for sales executives. More often than you think, the basic cause is psychological, not physical. Here's an account of what happens.

RISK MANAGEMENT

A Management Approach to Risk Problems

It is management's responsibility to make sure that every loss-causing possibility is provided for. By setting up a good, solid insurance program plus seeking out alternative cost-saving routes, they can minimize the losses caused by unexpected occurrences. This three-part editorial project highlights problems, methods, programming, and check-ups to help large and small industry.

I. Management Outlook..... 47

II. Building a Sound Program..... 51

III. Check and Balances..... 59

Subscription: \$5 a year in U.S.A., and Possessions, and Canada. Elsewhere \$10. Single copy, 75 cents. Please state title and employing company when subscribing.

Published monthly by Dun & Bradstreet Publications Corporation. Editorial, advertising, and subscription office: 99 Church Street, New York 8, N.Y., Digby 9-3300. Publication office: 300 W. Adams Street, Chicago, Ill. *Dun & Bradstreet* also publishes monthly *International Markets* and *Dun's Statistical Review*. The *Dun & Bradstreet* organization serves American business in the promotion and protection of trade through its varied services supplying information on business enterprises here and abroad, marketing and survey services, Municipal Service Department, and other fact-finding and reporting activities.

J U L Y 1 9 5 5

D E P A R T M E N T S

Heard in Washington..... 9

Paul Wooton reports on the Capital's thinking concerning important business news.

Voice of Industry..... 12

Business men voice opinions on world trade, communications, engineers, and atomics.

The Trend of Business..... 21

Keeping a steady eye on economic weather* indicators for possible future changes.

Frontispiece..... 30

Bustling Birmingham, Ala., is seen serenely from Crest Drive—Louis C. Williams Photo.

New Methods and Materials..... 63

Tougher coats for metals, more durable plastics, lighter panels, are in this month's news.

Executive Bookshelf..... 69

Reports on what exists between the covers of the latest books designed for executives.

Employer Relations..... 79

A lively ghost, Whiteside Manufacturing Corp., helps solve real personnel problems.

Here and There in Business..... 83

New developments, products, and uses to help managements in many and varied fields.

Next Month:

The Executive of Inadequate Personality

He's the man who just doesn't seem to have found his niche and, in spite of apparent promise when young, has never lived up to his potential. As a result, management finds that it has a costly liability on its hands whether he is kept or retired. It's a big problem, one that is best solved by early recognition, and here are some of the things to look for.



Our Cover

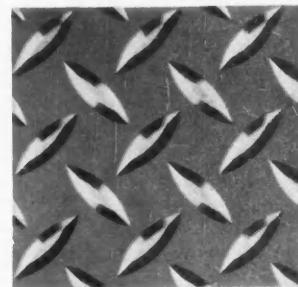
Independence Hall, in Philadelphia, was completed in 1759, became a national museum in 1876, and a national shrine in 1943. The land surrounding the Hall was designated a national park in 1948.

COLOR TRANSPARENCY BY LOUIS C. WILLIAMS

THE SEMI-ANNUAL INDEX of DUN'S REVIEW AND MODERN INDUSTRY for the January-June 1955 period is available. Copies of this index, with listings according to subject, title, author, and companies mentioned, may be obtained upon request.

Copyright 1955 by Dun & Bradstreet Publications Corporation. Copyrighted under International Copyright Convention. All rights reserved under Pan American Copyright Convention. The title DUN'S REVIEW AND MODERN INDUSTRY is registered in the U.S. Patent Office.

This magazine is indexed in the Industrial Arts Index, in the Public Affairs Information Service, and also semi-annually in an index available upon request to the publishers. Member ABC, BPA, NBP, SBME, and MPA. Printed in U.S.A.



One-half actual size

How many points in a SUPER-DIAMOND?

You'll find 40 non-slip traction points, angle-engineered to safety, in every footstep of A.W. SUPER-DIAMOND, the lifetime-lasting rolled-steel floor plate.

Count the other points which make for combined economy and safety in this master flooring for entire floors or small areas—low cost, overnight installation, durability, easy cleaning, fast draining, resistance to fire, heat and most chemicals—and you'll find that every foot in your plant is safer when you install the exclusive-patterned

SUPER-DIAMOND ROLLED STEEL FLOOR PLATE

"The diamond in the rough... a gem of a flooring."

ALAN WOOD STEEL COMPANY

Conshohocken, Pa.

Please send A.W. SUPER-DIAMOND Booklet SD-6

Name _____

Title _____

Company _____

Address _____

City _____ Zone _____ State _____

Other products: A.W. ALGRIP Abrasive Rolled Steel Floor Plate—Plates—Sheets—Strip—(Alloy and Special Grades)

For plants where oil, water and grease raise special problems of slipping accidents, we suggest a check on the special qualities of A.W. ALGRIP... the world's only abrasive rolled steel flooring.



**Some people couldn't
100,000 MILE
ON REO GOLD**

Naturally, this *has* to be the best line of medium and heavy duty truck engines ever built.

Only a sensational engine, vastly improved over the older models in use today, could stand up to a 100,000 mile warranty. Reo Gold Comet Engines develop a startling $\frac{1}{2}$ h.p. per cu. in. displacement—actually up to 35% more than the industry average. A new standard in modern truck engine efficiency.

No other line delivers so much *usable* horsepower to the wheels. No other has advanced wet sleeve construction throughout. *No other can be maintained and overhauled at just a fraction of standard costs.* A Reo Gold Comet in a tough

Reo chassis will give you more performance, economy and efficiency than you have ever known before. Ask today—for a demonstration *on your job.*



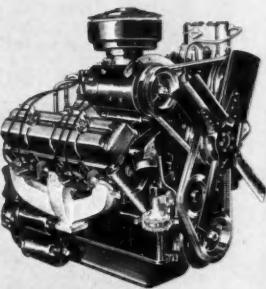
believe it . . . so we repeat

WARRANTY COMET ENGINES

220 H.P.

Gold Comet

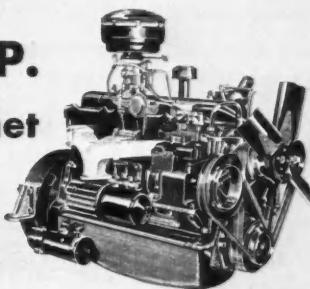
V-8



160 H. P.

Gold Comet

Six



Only 39½" long and weighing 1211 lbs. with all accessories—it's the *space- and weight-saving miracle* of modern truck engine engineering. Lets conventional tractors haul 35 ft. square-nose trailers within 45 ft. overall. Offers all the proven operating advantages of Reo replaceable *wet sleeve* cylinder construction. Pound for pound, the most powerful short stroke V-8 truck engine ever built.

World famous *wet sleeve* wonder engine. Big Brother to the 145 h.p. Gold Comet which rolled up a distinguished war record in Reo "Eager Beaver" Trucks. Engineered for peak power output, operating efficiency and maintenance savings. High h.p. to low engine weight and cu. in. displacement. Extra power and speed plus rugged dependability.

REO

SUBSIDIARY OF **BOHN** ALUMINUM AND BRASS CORPORATION

Reo Motors, Inc., Lansing 20, Mich. • Toronto, Ontario

BUSINESS IN MOTION

To our Colleagues in American Business . . .

It is a characteristic of American companies that they constantly seek to improve their products; this is in part responsible for the amazing strides made by industry. Revere is glad to aid in this endeavor through its Technical Advisory Service, and its Research Department, particularly for firms whose need for research is not such as to warrant purchasing costly laboratory equipment. A recent problem presented to us came from a maker of fishing reels. He had been cutting gears out of free-cutting brass, in order to achieve the machining economies such material offers.

This brass is widely and successfully used in gears for clocks, meters, and similar instruments. However, experience proved that a fishing reel, which is operated at various speeds and loads, presents a quite different service. Revere was asked to suggest a metal that would be more suitable in this application.

The Technical Advisory Service at once reported that either naval brass or aluminum silicon bronze would last longer. However, in order to determine the relative merits of the two, the Revere Research Department was asked to make tests. Gears of both metals were installed in reels, and a motor-driven machine was rigged to provide an accelerated wear

test. Each gear was run at 430 r.p.m. and at 100 r.p.m., at zero tension on the line, and at 1, 2, 3, and 4 pounds tension. After each run the gears were removed, cleaned, examined, measured and photographed. The reels were then reassembled, lubricated, and the next run started.

The results were impressive. After the gears had gone through 186,727 revolutions it was felt unnecessary to proceed further. Both reels were still fully usable. The naval brass was somewhat more worn than the aluminum silicon bronze, however, it certainly was evident that naval brass would be satisfactory. The reel maker was determined to offer the best he knew how to make, and selected the more expensive aluminum silicon bronze. He knows conclusively now that his reels will give long service, enduring satisfaction, and will protect his reputation and help his business grow.

If you have questions as to the best material or materials for your product, no matter what it is, and do not have a modern research laboratory, why not ask your suppliers for help? Some may have an immediate answer; some may wish to test alternatives. You will benefit either way, and make faster and surer progress in your search for improvement.



REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Avenue, New York 17, N. Y.



BUSINESS "ebullience" is such as to call for caution, says Woodlief Thomas, economic adviser to the Board of Governors of the Federal Reserve. It is when pressures of credit demands are heaviest that laxness must be avoided, he believes. Plans for plant expenditures, borrowing for larger inventories, installment buying demands of public bodies, plus the substantial amounts of financing that must be done by the Treasury in the last half of the year, are certain to put strain on capital markets. In warning against "unstabilizing excesses," Thomas mentions as disquieting, "lenient" Government guarantees for mortgages on residential building. Such construction might outpace the market.



No adjective less graphic than "phenomenal," in the opinion of Commerce Secretary Sinclair Weeks, can be used to describe the record for sustained prosperity that is being built month after month. Nearly every factor influencing business, he points out, is "positive, constructive, solid, and substantial." He feels that the intensity of competition is a big factor in the present situation. Industry and business are showing their confidence in the future by expanding their operations, but they are not alone. Consumers, too, are demonstrating that they have faith in the outlook.

Consistent economic progress calls for quality in the decisions made by business executives. If sound, prosperity can be stretched out. This is the opinion of Governor C. Canby Balderston of the Federal Reserve, who recalls the Riefler declaration that the business situation is no better than the decisions business men make. The most vital of such decisions as listed by Balderston are those relating to "capital

additions, inventories, elimination of waste by efficient controls and by mechanization, and the development of new products. No less vital are decisions to acquire other firms through purchase or merger."

As usually is the case at the end of a Congressional session, an investigation of the open market committee was suggested. If there ever was a time the committee would like to be investigated, it is now. There is a feeling that its record in the handling of the upswing this year and in 1953 has been successful, as was the case with the policies followed when business slacked off in 1954.

With the defense component of the industrial index down ten points, the 1953 high is being maintained. The climb back from 1954 lows has been orderly. Prices have changed very little. Conditions that could materialize in the third quarter, however, threaten an advance in prices. Officials are concerned. They do not want prices on a level that cannot be sustained.



Every promise made by President Eisenhower before and since his election has been listed by the Republican National Committee, along with a complete annotation as to how they have been kept. It will be used as a campaign document.

Population is being augmented at both ends. People are living longer. More babies are being born. Marketing studies are paying more attention to each of these groups. For infants, the study deals principally with food, clothing, and accessories. For the older group, the emphasis is on services rather than goods. Attention is being centered on another market area which has been neglected. There are now 17 million

negroes in the United States. Their buying power has "increased" greatly in recent years. Various aspects of that important market call for study.



Per capita income of farmers has risen without interruption for more than two decades. Ezra Taft Benson predicts that this rise will continue through the years. Even in 1953 and 1954, when total farm income declined, per capita income advanced. The higher rate of industrial production has been reflected in increased demand for farm products.

The House of Representatives, by a narrow margin, voted against flexible price supports for agricultural commodities. The debate was not acrimonious. A sort of malice-toward-none but parity-for-all spirit prevailed. The vote would have gone the other way had it not been for the conviction that the Senate would not interfere with the trial being given flexible supports.

Headway is being made in the Administration's "human resources" effort to balance industry and agriculture in areas where farms alone cannot produce adequate income. Advantages of locating industrial activities in such areas are being pointed out. Farm income then can be supplemented by wages. Support is being given by the Defense Mobilization Office, which is working hard to encourage dispersal of industry.

Even Government has felt the impact of the resurrection of Davy Crockett. A study is underway to determine what motivates an idea that sweeps the country and creates sudden demand for certain products such as coonskin hats.

Now that consumers have more funds for discretionary expenditures, support is available for any



"One Bunn Tying Machine does the work of at least 5 hand tyers,"

says R. E. Lamkin,
LAMKIN LEATHER CO., Chicago

"The Bunn Package Tying Machine has reduced our packaging costs tremendously, and has eliminated all shipping room bottlenecks," reports Mr. Lamkin, Vice-President of the country's largest producers of leather golf grips. "We consider the Bunn Machine one of our most valuable pieces of equipment."

Speed and economy are only two of the many advantages Bunn Tying Machines offer businesses of every kind. Check these others . . .

Automatic adjustment to any size or shape; proper, uniform tension on every bundle, package or box; tight knots that are slip-proof and tamper-proof; right amount of twine on every package eliminates waste; simple, fatigue-less operation requires no training, increases employee production; easily moved to any work area.

Whatever your product, whatever your business . . . anything that can be tied by hand can be tied faster, better, more economically with a Bunn Package Tying Machine.

BUNN

**B. H. BUNN Co., Dept. DR-75
7605 Vincennes Ave.
Chicago 20, Ill.**

GET THE WHOLE STORY

Send today for this fact-packed booklet, which illustrates the many advantages of Bunn Tying Machines. There is no obligation.



MAIL THIS COUPON NOW

B. H. Bunn Co., Dept. DR-75

7605 Vincennes Ave., Chicago 20, Ill.

Please send me a copy of your free booklet which shows how Bunn Machines can save time and money in my business.

Name _____

Company _____

Address _____

City _____ Zone _____ State _____



Big story in a want ad—

Four electric billing machines for sale...because the invoicing formerly done by four girls is being done by one—with an Ozalid machine! Saving \$700 a month!

How? Salesmen write their orders on translucent paper forms. Prices, extensions, directions, and terms are added. Ozalid copies serve as invoices, bills of lading, sales records, etc.

Ozalid makes exact, clear copies of anything typed, written, printed or drawn on any translucent (lets light through) material—without negatives, stencil, messy developing. The copy is made in less than a minute, costs less than 2¢. And anybody can use an Ozalid machine.

Ozalid gets rid of hand copying, retyping, transcribing or redrawing—saves time spent on repetitive tasks.

And makes quick copies of bulletins, reports, memos, letters, charts, etc.

Ozalid-copied requisitions are used as purchase orders, vouchers, debit memos, receiving records—often save discounts as well as time.

ANY office can save time, cut costs with Ozalid. For a demonstration, call any Ozalid distributor (*see phone book*). Or write 41 Ozaway, Johnson City, N. Y. In Canada, Hughes Owens Co., Ltd., Montreal.

OZALID—A Division of General Aniline & Film Corporation...From Research to Reality



OZALID

fad or craze that gets started. So that advantage may be taken of markets thus created, it is felt that ways can be found to recognize them at earlier stages in their development.

Commerce Department field men are pointing out to business groups that in a highly competitive period such as the present, the complacent are likely to be forced out of the race by those who are more resourceful and more enterprising.

Decline in defense spending is being readily counterbalanced by increased demand for civilian goods, despite the fact that exports are lagging behind their normal ratio to the gross national product. The better showing being made by imports is due in part to the enterprise of American firms who are searching the world for cheaper sources of supply.



That downturn in business in 1954, which did not last, may be helpful in the future, it is thought, because the next dip in the business cycle is more likely to be regarded as just another temporary breather, thus militating against loss of confidence.

Avoidance of a strike in the automobile industry was greeted with unconcealed satisfaction by Washington officials. The President was careful not to interfere or to view the strike possibility with alarm. He adhered to his policy of allowing the parties concerned to settle their own differences. Had there been a strike, however, he would have been unable to avoid taking a hand. Then anything he could have done would have been a political liability. Members of each of the political parties recognize that the settlement enhances the President's chances in 1956.

The tendency in Administration circles is to regard the settlement as another pension plan which is not as earthshaking as some claim. Since the industry does not expect

heavy unemployment as long as business generally is good, another incentive is added to keep it that way. Other effects would be to discourage model changes, and additions to the work force. It will be difficult for legislators in the several states to take a position against additional security.



For many months business took little note of the international situation. More interest now is being manifested. Developments of far-reaching importance have been taking place that are certain to have a bearing on the American economy.

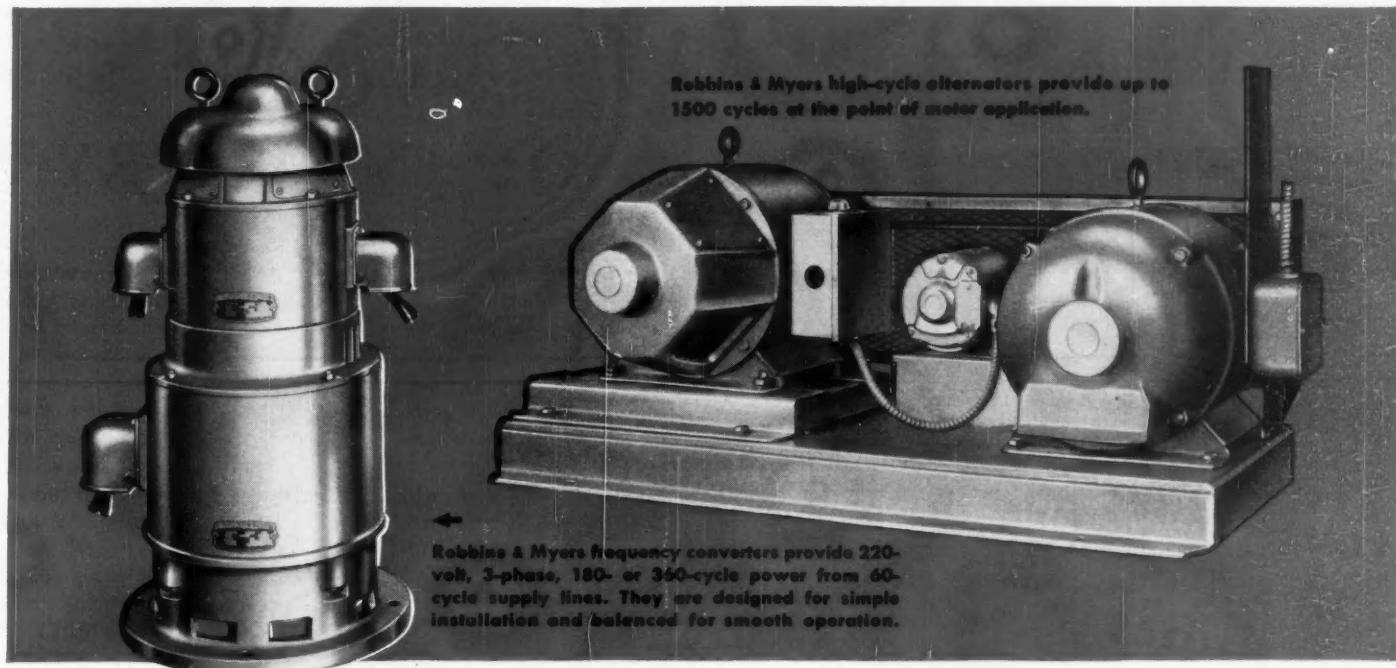
Outcome of the British elections indicates that the disadvantages of socialism and of many other left-wing policies are being recognized more generally. Controls, centralization, and bureaucracy have become increasingly unpopular. Socialism is seen as a definite bar to integration in Europe. There is evidence that the middle-of-the-road policy of this country's administration is popular, although it is having the effect of influencing the opposition to go further and further to the left for issues.

Western Germany is being crippled in no important way economically by being separated from the eastern areas once a part of the country, Secretary Weeks reports. It could use some of the coal and foodstuffs produced behind the iron curtain, but these are readily available from other sources. What Western Germany has done in the ten years since the war is "miraculous," says the Commerce secretary.

The Summer lull should not be regarded as a sign of economic weakness. Vacations have become a part of the American way of life. Reduced industrial activity in July and August is now accepted as a part of the seasonal pattern.

Construction provided a surprise in 1954. New plant and equipment expenditures constitute the surprise of 1955.

Paul evooton
WASHINGTON, D. C.



R & M frequency converters and alternators provide economical sources of high-cycle power

The applications for high-cycle motors are mounting with increased demand for high-speed routers, planers, grinders, etc., in both the wood and metal working industries. Also in portable tool design, the high-cycle motor is proving most applicable where small size, light weight and minimum maintenance are paramount.

Robbins & Myers frequency converters and alternators are convenient, economical sources of high-cycle power. They can be installed at the point of use.

R & M Frequency Converters

R & M frequency converters convert 60-cycle A.C. to 220-volt, 3-phase, 180- or 360-cycle. These units are low in cost, high in efficiency, require negligible maintenance. They need no exciter or

auxiliary equipment other than a motor starter.

They are designed to meet unusual overload conditions. Voltage change from no-load to full-load does not exceed 8% for 180-cycle converters, and 15% for 360-cycle converters.

R & M Alternators

R & M alternators are high-frequency generators that provide high-frequency current within each of a number of ranges, up to 1500 cycles—beyond the range of converters. They are available from 7.5 kva, 360-500 cycles, to 2 kva, 1000-1500 cycles.

Polyphase driving motor and alternator are both in the rugged R & M "All-Weather" design, which keeps out

moisture. Separate exciter unit provides direct current to the alternator field circuit. Rheostat in the exciter field circuit permits control of the alternator voltage. Pulleys may be changed to provide the frequency desired by the user, within the range of each unit.

R & M Motors to 200 HP

In addition, if you need a motor, whether standard or custom-designed . . . motors with special housing designs or motor parts to fit your housings . . . fractionals from 1/200th HP up—integrals to 200 HP . . . write us today. Our motor specialists do a scientific job of matching the motor to the product or application. We can make a real contribution to the solution of your problem.

R & M makes both!

Fractional-horsepower motors and parts . . . from 1/200 HP.

Integral-horsepower motors; famous R & M "All-Weather"** with sealed bearings. Up to 200 HP.

If it's an R & M, it's the Right Motor!

**"All-Weather" is an R & M trademark.



ROBBINS & MYERS, INC.

MOTOR DIVISION: SPRINGFIELD 99, OHIO—BRANTFORD, ONTARIO



Fractional & Integral
HP Motors & Generators



Moyno
Pumps



Propellair Industrial
Ventilating Equipment



Electric
Fans



Electric & Hand
Hoists & Cranes

Robbins & Myers, Inc., Motor Division,
Springfield 99, Ohio

MI

Please send me, without obligation, information on:

- | | |
|--|--|
| <input type="checkbox"/> Frequency Converters and
High-Frequency Alternators. | <input type="checkbox"/> Motor Parts
for Portable Tools. |
| <input type="checkbox"/> R & M "All-Weather"
Motors up to 200 HP. | <input type="checkbox"/> Please have a
Motor Specialist call. |

Product we manufacture: _____

Name _____ Title _____

Company _____

Street _____

City _____ State _____

VOICE OF INDUSTRY

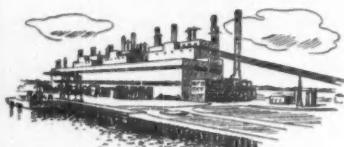


**The Largest, Best-located
deepwater Industrial Location
on the Atlantic Seaboard**



BALTIMORE— GATEWAY TO WORLD MARKETS

With direct rail-ship cargo transfer, one of the largest privately-owned railroad Marine terminals in the world . . . B&O's Locust Point Marine Terminal . . . offers unsurpassed modern facilities.



PACKED WITH POWER

Abundant electric power at economical industrial rates. The Wagner Station—"on-line" in 1956—with otherplants of the interconnected system means more than 2,000,000 kilowatts . . . Natural gas, too, is available.



Baltimore & Ohio Railroad

Those who KNOW use B&O!
Constantly doing things—better!

*World trade and
the business man*



"Peace and prosperity are international aims."

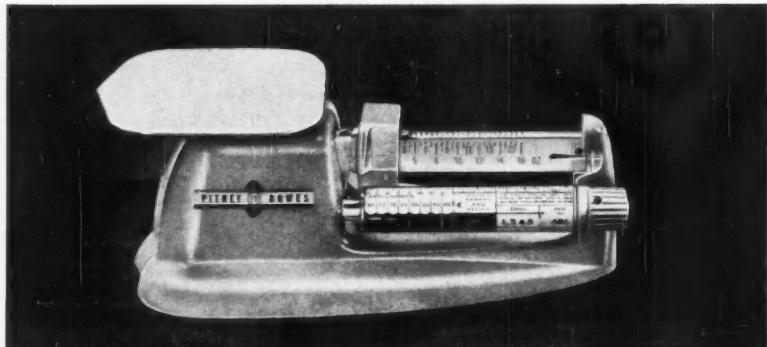
EUGENE HOLMAN

Chairman of the Board, Standard Oil Company (New Jersey), before U. S. Chamber of Commerce, Washington, D.C.

If world events do affect us business men, what can we do about them? The first thing we should do, it seems to me, is to keep informed. Public opinion in the United States can be of great weight in framing internal or foreign policies which may touch upon the in-

terests of the American business community. By making our views known to representatives on international bodies, each of us can be a constructive force. We can also effectively work together in associations such as our local and national Chamber of Commerce to be sure that what we believe is heard.

As individuals, it seems to me that in this same respect American business men have a great obligation and opportunity right at home. To-day there is apparent in many parts of our country evidence of impatience and discouragement about relations with people of other nations. Much of it stems, understandably, from having our own expression of good-will misunderstood. When we see people in other lands apparently disliking us in spite of the money and technical skill we have given to help them rebuild, it is sometimes hard to hide our dis-



New! Pitney-Bowes Scale for small offices

This new mailing scale, precision-built by Pitney-Bowes, computes postage costs from $\frac{1}{2}$ ounce to 1 pound, is a real saver of time and postage in any office. Its handy cylindrical chart permits swift, safe rating of letters and small parcels including air mail. Prevents loss of postage money through overpayment, and loss of good will through underpayment (with resulting "postage dues").

Other models for larger mailers include parcel post up to 70 lbs. Ask your nearest PB office to demonstrate, or write for free illustrated booklet.

FREE: Handy desk or wall chart of Postal Rates with parcel post map and zone finder.

**PITNEY-BOWES
Mailing Scales**

PITNEY-BOWES, INC., 1579 Walnut St., Stamford, Conn.
Originators of the postage meter . . . offices in 94 cities



"Janitors can be efficiency experts, too."

IF they follow this fellow's example. He knows that with a SUPER WESTONE treated mop he can control dust and beautify his floors — just as fast as he can walk.

SUPER WESTONE actually cuts the cost of floor care.
— loosens and picks up dirt more readily.
— increases time between waxings.

SUPER WESTONE is *antiseptic*.
— arrests the growth of bacteria.
— helps prevent spread of airborne infections.

AND SUPER WESTONE is safe to use on any floor surface. No fire hazard exists, because it can be mixed with water. And no residual "build-ups" are left on floors.

OLDEST AND LARGEST
COMPANY OF ITS KIND
IN THE WORLD

A WEST representative will be glad to demonstrate. Without charge. Or send for our SUPER WESTONE folder.



WEST DISINFECTING COMPANY

42-16 West Street, Long Island City 1, N. Y. (Branches in principal cities)
In Canada: 5621-23 Casgrain Ave., Montreal

Dept. 1

- I'd like a free copy of your folder on controlling bacteria and dust with SUPER WESTONE.
 I'd like to have a WEST representative telephone me for an appointment.

Name _____

Position _____

(Tear out this coupon and mail it with your letterhead)



Barrett PalletOx Model PX 4" lift cap. 4000 up to 6000 lb.

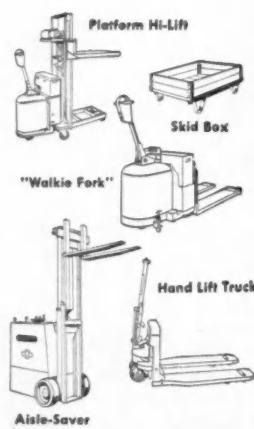
BARRETT PALLETOX

the low-cost "walk away"
for loads up to 6,000 lbs.

Barrett PalletOx walking type power lift truck is a money-saver on short hauls... load spotting... general pallet handling. Often eliminates expense of rider type power truck operation. PalletOx is made for fast operation—gets into tight corners—short turning radius—no lost-time gaps to slow down handling. 4" lift prevents floor snagging. Write for complete descriptive literature.



You will want Catalogs 551-1-2-3 on the complete Barrett "Walkie" type Power Truck. Your request will bring a copy.



Barrett equipment for every job

High labor costs demand specialized equipment. There is a Barrett-built unit specially designed to handle any moving job at low cost... even when operated by less experienced help.

Your Barrett representative will gladly assist in selecting the type and model of material handling equipment best suited to your needs.

BARRETT-CRAVENS COMPANY
612 Dundee Road, Northbrook, Ill.

Representatives in All Principal Cities.
Canadian Licenses: S. A. Armstrong, Ltd., Toronto, Canada

BARRETT
ONE MAN DOES MORE THAN 3 OR 4...WITH A BARRETT

appointment. The final result may be a feeling to let other people "go fly their own kites."

Such an attitude is contrary to the American character and can only breed unhappiness for ourselves and the world. If we as individuals are familiar with the true import of world economic developments, it will help us explain to our neighbors on Main Street that other free-world nations are really not unfriendly. Peace and prosperity are, in general, international aims. Only by patience and tolerance on both sides can the minor dissatisfactions be resolved. And these virtues are already showing results.

*Broadening the view
of communications*



"We should know everything there is to be known."

J. EDWARD TRAINER

Executive Vice-President, Firestone Tire & Rubber Company, before American Institute of Electrical Engineers, Akron, Ohio.

What can we do to improve the communications of our own businesses and of business in general? It seems to me that the most important element in the answer to this question lies with us and what we know about the free enterprise system. We should, therefore, know everything there is to be known. And in possession of these facts, we should broadcast them in connection with what we are currently doing or plan to do.

Our employees are perhaps the most important factors at the end of our lines of communication. Through personal contact if possible, and if not, through our publications, letters, and bulletins, we should tell our story to them.

Our relations with the press are important, and we should do everything in our power to get our story over to the community and the general public through this medium.

Whenever we are invited to speak at a gathering, we should feel not only the obligation to do so, but we should look upon the occasion as an opportunity to talk about the free



S A V E S . . .

TIME—Fast, automatic, trip-hammer action. Drives staples fast as you grip. Take-up Jaw makes on-the-job servicing easier, quicker.

STEPS—Self-contained, ready for instant, continual use. Saves back-tracking. Light weight, easily portable. Vest-Kit for quick refills.

MATERIALS—Balanced design. Accurate, precision driving. Improved use of materials. Less waste. Powerful action drives each staple securely.

HANSEN VEST-KIT STAPLES

HANSEN VEST-KIT staples are quick to get at—easy to use. Narrow, slender box fits readily in vest pocket. Packed in convenient strips for instant use.

As near as the Vest Pocket



A. L. HANSEN MFG. CO.

5034 Ravenswood Ave., CHICAGO 40, ILL.

1 Numbering Machine 10 Jobs go Faster . . .

345678



Automatic, all-purpose numbering machine speeds up dozens of everyday jobs in office or plant. (Provides consecutive, duplicate or repeat numbering.) See your dealer or let us send our catalog "How to Select a Numbering Machine."

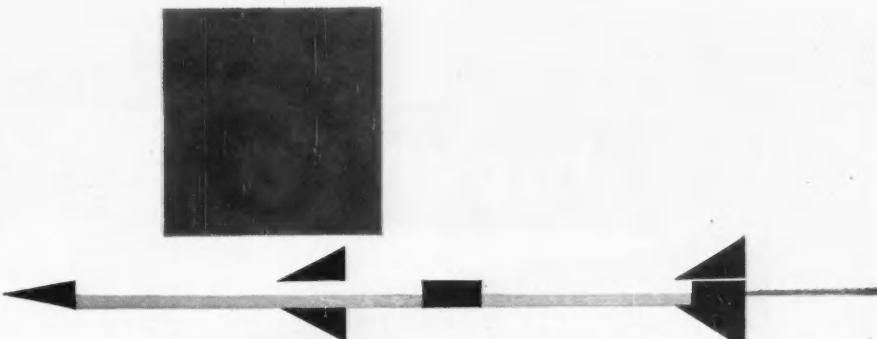
Specify FORCE for the Finest

W.M.A. FORCE
& COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N.Y.



Electronic
computers

for guiding
or intercepting



INSTRUMENTATION

Aircraft and Navigation

CONTROL SYSTEMS

Airborne and Shipborne

COMMUNICATIONS

Equipment

COMPONENTS

Electronic and Magnetic

ELECTRONIC COMPUTERS

Commercial and Military

Burroughs is actively engaged in defense projects in all these fields. Burroughs, through its extensive facilities, is equipped to perform the complete cycle of work—from analytic and study phases, and the development of original concepts and design ideas, through large volume production and testing. Address inquiries to Burroughs Corporation, Detroit 32, Michigan.

Burroughs

Known world-wide for outstanding, high-speed accounting, statistical and computing machines, Burroughs also occupies a strategic position in the advanced field of electronic computers and data processing equipment.





Here's another Tornado First in "modern cleaning methods."

For those users who require a large capacity cleaner—for wet or dry pickup—Tornado now supplies a Jumbo Conversion Kit.

You save plenty on this new feature because the kit mounts right on any standard 55 gallon drum you have, or can purchase locally.

All you need buy is the Tornado removable motor unit,* cover plate, filter bag and support rod. A 4 wheel dolly is also available for portability.

Net result—a 55 gallon wet or dry cleaner at less than the price of a regular standard type commercial cleaner.

* Motor units in $\frac{3}{4}$, 1 or $1\frac{1}{2}$ H.P. can also be converted to (1) Shoulder type vacuum, (2) Air sweeper, (3) Portable electric blower, or (4) Insecticide sprayer.



WRITE FOR TORNADO
BULLETIN 694

If you are already using a Standard Tornado Cleaner with a removable motor unit, it can also be used with the Jumbo Conversion Kit—all you need is the cover plate, filter bag and rod.

BREUER ELECTRIC MFG. CO

5106 NORTH RAVENSWOOD AVENUE • CHICAGO 40, ILLINOIS



enterprise system, what it is, how it works, and the benefits it brings to everyone.

In small groups, too, we should be articulate. Whenever it is appropriate, in social or other gatherings, we should try to encourage discussions which will stimulate others to think about the problem and to become advocates and ambassadors for our system of competitive free enterprise.

All of us should take an active part in the co-operative activities of the community, as many of us do. We should be active in support of our educational efforts, and we should see to it that we make teaching jobs attractive enough so that we obtain the right kind of teachers. We should not only pay our teachers good salaries, but we should improve their status in the community.

Leadership and understanding: Goals for engineers



"... a place for
our engineers to ex-
ercise leadership."

HENRY B. DU PONT

Vice-President, E. I. du Pont de Nemours & Company, before visiting engineers, Wilmington, Del.

I am inclined to think that more progress has been made by the engineers in broadening the base of education than by those on the liberal arts side of the campus. For just as it is essential for the technical worker to understand the implications of history, of economics, and of the arts, it is equally important for those in the social sciences and in the general field of culture to understand some of the problems and some of the results of technology and the nation's industrial growth. Greater understanding by the engineer of social problems, greater understanding of engineering problems by society generally—that is the goal we should seek.

Achievement of this goal is a basic need if we are to solve the problems of our advancing technology. I am confident that solutions to scientific problems, difficult and complex as they may seem, can,



Register it Emblematically!

You're proud of your trade mark . . . why not merchandise it to its greatest advantage . . . on I & R jewelry awards.

Attractive and practical, our jewelry with your trade mark or product reproduction makes the ideal gift for anniversaries, sales achievements and service awards and it registers your trade mark every time it's worn!

We would welcome the opportunity to put yours in front of people's eyes. Write for further information.

IRONS & RUSSELL COMPANY
Emblem Manufacturers Since 1861

95 Chestnut Street Providence, R. I.



THE TRUCK THAT HAS EVERYTHING
... (Except Dead Weight!)

It's the load that pays the freight . . . nothing else! Don't penalize your floor truck operations with the needless burden of excess weight. Now, in answer to popular demand, Magline—America's oldest and largest exclusive manufacturer of magnesium dock boards, hand trucks, and materials handling equipment—introduces this new, magnesium-light, magnesium-strong, 4-wheel platform truck. Capacity rated to handle loads up to $\frac{1}{2}$ ton, it weighs in at a mere 49 pounds . . . lighter than similar equipment by as much as 75%! Thirty standard models to choose from. Before you buy platform trucks for any purpose—write for Information Bulletin No. 151.

Magline Inc. P.O. Box 17 Pinconning, Mich.

Servel Air Conditioning Tames Arizona Temperatures in Historic Cathedral



THIS air conditioning problem had special restrictions. Church officials requested: "No noise. No existing structure must be disturbed. The altar candles must not flicker."

Quite an order for the Servel dealer, Hearn Plumbing & Heating, Inc., who air-conditioned Tucson's historic San Agustin Cathedral.

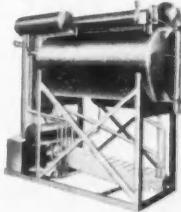
Two Servel 25-ton Water Chillers solved the problem neatly. The equipment was placed behind the church in a small building that was formerly used for storage. From this small building is piped all the chilled and hot water which completely air-conditions the church with hardly a sound. Nothing is visible to disrupt the church's beauty.

These units make this spiritual haven a physical haven as well. More than 6000 square feet of space is cooled, providing air-conditioned comfort for over 1000 worshipers at a time.

When you consider air conditioning, look to Servel. Specify Servel for maximum efficiency and minimum operating and maintenance costs. For further facts and engineering assistance, see your dealer or send coupon.

Servel
the name to watch for great advances in
AIR CONDITIONING ✓ REFRIGERATION

Servel 25-ton Water Chiller has no moving parts. Operates without vibration and wear, even at peak loads. Carries 5-year warranty.



SERVEL, INC., Dept. DR-75
Evansville 20, Indiana

Send me specifications and full information on Servel Water Chillers.

Name _____

Firm _____

Address _____

City _____ Zone _____

County _____ State _____

*Boost employee
morale . . .*

**WITH THE PLEASANT,
INVIGORATING HEAT
FROM THE UNIQUE
Wing REVOLVING
UNIT
HEATERS**

WING
REVOLVING
UNIT
HEATER

P.S. In the Summertime with the steam off, the revolving discharge outlets produce a pleasant cooling effect . . .

L. J. Wing Mfg. Co. 315 Vreeland Mills Road, Linden, N. J.

Factories: Linden, N. J. & Montreal, Can.
In Europe: WANSON, Haren-Nord, Brussels, Belgium

Wing

L. J. Wing Mfg. Co., Linden, N. J.		DR-7
Please send me Bulletin HR-6A-Revolving Heaters		
Name.....		
Firm.....		
Address.....		
City.....	Zone.....	State.....



in time, be reached. But the usefulness of these developments and their application to human wants will depend, in a large part, on winning public understanding and acceptance. Understanding among people and among nations is a goal of greater potential worth than any single scientific achievement we can now foresee. . . .

So here is a place for our engineers to exercise leadership.

*Private industry's
atomic opportunities*



" . . . this area
should be . . . in-
vestigated by indus-
try . . . "

CORBIN C. ALLARDICE

Executive Director, Joint Congressional Committee on Atomic Energy, before Atomic Industrial Forum, New York, N.Y.

I would like to talk a bit about

the development and manufacture of components, for both production and utilization facilities. In the gaseous diffusion system, for example, thousands of special purpose pumps, special barriers, and other special purpose equipment of all kinds are needed. Some of these are to-day developed by private industry with private funds in private plants and sold to the Government. Others, however, still are developed at Government facilities by Government contractors. It would appear that this area should be perhaps more closely investigated by industry for it seems rather well adapted to normal industrial practice.

In reactors, special control systems, special shielding materials, special instrumentation, all are possible of development by private funds in private facilities and here, too, one would hope and expect to see a gradual shift into a normal industrial development and production pattern. With the anticipated large military market for propulsion reactor systems, this shift to normal industrial patterns will be hastened.

FREE
for five days

Try an Underwood Sundstrand in your own office FREE for 5 days. Give it the most rugged workout on your own work. Let your own operator test its fast, easy action, its smooth, dependable touch. We will deliver an Underwood Sund-

strand to your office without cost, obligation or inconvenience. Call your Underwood Sundstrand representative or write to Underwood Corporation, Dept. D-18, One Park Avenue, New York 16, New York, for a 5-day FREE trial.

UNDERWOOD CORPORATION
One Park Avenue, New York 16, N.Y.

How many of YOUR people eat?

— of course everyone eats
 but — HOW and WHAT and WHEN and WHERE?



PROPHET OPERATED STUDENT DINING ROOM
 WENTWORTH MILITARY ACADEMY, Lexington, Mo.



PROPHET OPERATED EMPLOYEE CAFETERIA
 WESTERN ELECTRIC, Allentown, Pa.



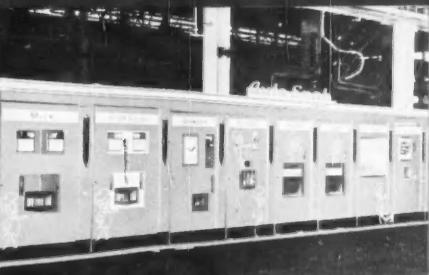
PROPHET OPERATED MOBILE UNITS
 CONVAIR DIVISION, San Diego, Cal.

All problems relative to the feeding of factory workers, office workers and students can be most satisfactorily met by The PROPHET Co. We offer you the advantages, coupled with the efficiency and economy made possible by specialized food services, such as we have been giving to our clients for more than 35 years.

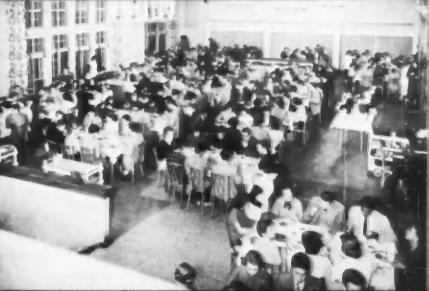
Organized food services are of vast importance in the maintenance of worker and student morale as well as for their efficiency. The preparation and serving of good and attractive meals is a job for experts—a job that can only be best performed by an organization that has proved its ability and versatility in successfully meeting and handling all types of food services. Take the "problem" out of food services. Just write, wire or phone—we'll gladly tell you more.



PROPHET OPERATED EXECUTIVE DINING ROOM
 MORaine PRODUCTS DIV., Dayton, Ohio



PROPHET OPERATED VENDING MACHINES
 THE BUDD COMPANY, Detroit, Mich.



PROPHET OPERATED STUDENT DINING ROOM
 PARK COLLEGE, Parkville, Mo.

The Prophet Co.

705 Fisher Building Detroit 2, Michigan

INDUSTRIAL • INSTITUTIONAL • RETAIL
 Food Management and Consultant Service

We invite you to fill out the coupon requesting a copy of our fully descriptive and illustrated brochure entitled "How many of YOUR people eat?"



The Prophet Co.

705 Fisher Bldg., Detroit 2, Mich.

Kindly send us a copy of your brochure "How many of YOUR people eat?"

Name _____

Title _____

Company _____

Address _____

Firesone



PARK COLLEGE
 PARKVILLE, MISSOURI



WURLITZER



EASTERN STAINLESS STEEL
 CORPORATION



AMERICAN RADIATOR
 CORPORATION

Bendix



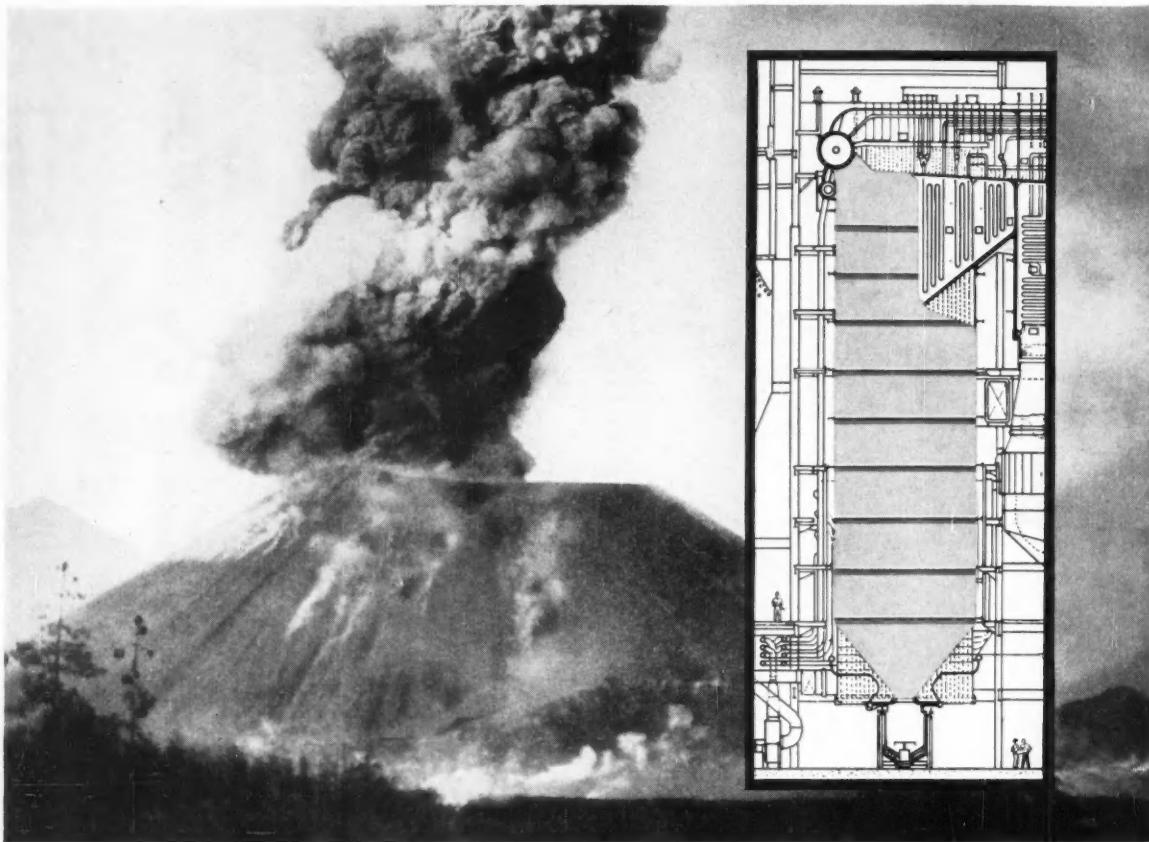
GOOD YEAR



COPPER • BRASS
 & ALUMINUM

PROPHET SERVES THE U. S. FROM COAST-TO-COAST

The above logotypes indicate only a few of the firms and institutions
 The Prophet Co. serves in more than 140 installations in 22 states.



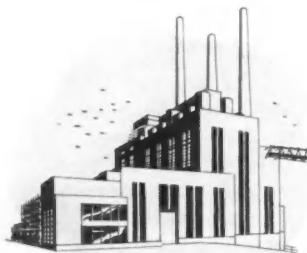
Hot—like a volcano—but wears an overcoat

Inside this giant boiler, *extremely intense and continuous heat* plays a major role in generating electricity for the Walter C. Beckjord Plant—one of three power stations operated by The Cincinnati Gas and Electric Company.

For top efficiency, the flow of intense heat must be controlled to exacting specifications. And that's the vitally important function of Eagle-Picher industrial insulation. It serves as an overcoat for

heated equipment throughout the plant—locks in the heat and helps maintain uniform temperatures. As a result, fuel costs are minimized and Eagle-Picher helps this company provide electric power for the community at "the lowest possible cost."

Wherever heat control is important—in power, marine, petroleum, steel or chemical industries—Eagle-Picher insulating products are on the job.



High and low temperature insulations are among hundreds of Eagle-Picher products for homes and broadly diversified basic and growth industries.

Divisions and principal products . . . INSULATION DIVISION, aluminum combination storm windows and doors, mineral wool insulations, diatomaceous earth products—PIGMENT DIVISION, lead and zinc pigments and oxides—MINING & SMELTING DIVISION, zinc, lead, germanium, cadmium—OHIO RUBBER COMPANY DIVISION, molded and extruded rubber products—FABRICON PRODUCTS DIVISION, automotive products, plastics, waxed paper and cellophane food wrappers. We welcome opportunities to share our research, production and application experience. Just drop us a line.



Since 1843

EAGLE-PICHER

The Eagle-Picher Company • General Offices: Cincinnati 1, Ohio



LUNENBERG, VT.—DEVANEY PHOTOGRAPH

The Trend of BUSINESS

- Consumer spending at peak
- Business spending on the rise
- Slight dip in car buying
- But failures increase

At The Summit

Like the Queen in *Alice in Wonderland*, many business men feel they have to run rapidly just to stay in one place. To hold their respective spots in industry, many manufacturers must now sell ever larger volumes to a population which is growing at the rate of about 7,000 per day (about 10 per cent are immigrants).

Along with the growth of competition, there has been a remarkable shift in business confidence during the past year. Last Summer there was little debate about the downward direction of business activity; the problem concerned the duration of the decline. Today there are few doubts about either the direction or the near-term duration of the high business activity.

If confidence is not damaged by the seasonal dips during the Summer—which appear to be shaping up as smaller than usual—the recovery may gain momentum in the Fall. Many economists and business men envisage little difficulty for business in 1956, which happens to be an election year. Others persistently insist, however, that there is no such thing as a G.A.B.—a guaranteed annual boom.

The sentiments of business men generally have been as high as the various indexes of economic activity, which have been breaking records consistently in recent months. Preliminary information from Dun & Bradstreet reporters in 66 cities in 39 States indicated continued gains last month in output, production, consumer spending, employment, new orders, and the other indicators

of business conditions in many industries.

During the first half of 1955, goods were flowing from factories like a river at floodtide. The production of plastics has been up about 10 per cent from last year to set a new high. Television sets were produced close to the record level of

1953. New orders for paperboard, which are frequently a precursor of total industrial production, were up 30 per cent last month. The output of electric power averaged 15 per cent higher than the first half of 1954, thus setting a new record. More freight was moved over the nation's rails last month than at any time in the past eighteen months. Up to early May new orders for furniture were running 14 per cent higher than last year. Orders for industrial machinery have been consistently above 1954. Both valves and bivalves were increasingly numerous. Maryland reported the highest oyster output this season in fifteen years.

How High The Boom?

Total industrial production last month held at May's near peak according to early reports from 66 offices in 39 States. The year-to-year gain of 10 per cent was compounded of substantial rises in automobile production, building materials, electrical machinery, and very slight gains or declines in food, petroleum, and ordnance.

At 138 (1947-1949 = 100), the FRB index of industrial production in April had returned to the all-time high previously touched in March 1953, before the end of the Korean clash. Since the deepest drops had been in durable goods in 1953-1954, the most spectacular recovery has been in that line. With many industries operating close to capacity and on overtime, total output is generally expected to hover near the present level for the next few months.

Weekly Business Signposts

SELECTED BUSINESS INDICATORS	LATEST WEEK*	PREVIOUS WEEK	YEAR AGO
Steel Ingots Production. Ten Thousand Tons	235	232	172
Bituminous Coal Mined Hundred Thousand Tons	94	87	76
Automobile Production Thousands Cars and Trucks	164	159	134
Electric Power Output Ten Million KW Hours	999	1004	885
Freight Carloadings . . . Thousands Cars	787	714	698
Department Store Sales Index Number (1947-1949=100)	114	102	111
Wholesale Prices . . . Index Number (1947-1949=100)	110	110	110
Bank Clearings . . . Hundred Million Dollars	100	94	97
Money in Circulation . . . Hundred Million Dollars	300	300	299
Business Failures . . . Number of Failures	214	230	207

*Steel data are for the fourth week of June. Coal, freight, sales, money for the second. All others for the third week.

Sources: Amer. Iron & Steel Inst.; Bureau of Mines; *Automotive News*; Edison Electric Inst.; Assn. of Amer. Railroads; Bureau of Labor Statistics; DUN & BRADSTREET, INC.

CM* Contract Manufacturing

*It can help you with costs
and capital investments...*

CM*—Contract Manufacturing—is being ever more widely used by a growing number of companies . . . companies of every size . . . companies with and without manufacturing facilities of their own. CM is a vital part of their and the American Economy.

WHAT IS MEANT BY CM*: CM is true Contract Manufacturing. CM provides complete facilities for design, engineering, research, every phase of mechanical and electro-mechanical production, metal fabrication, complete assembly, package design, shipping and warehousing. These facilities should be equally available for component parts or complete products. If you are now using a contract manufacturer, and he does not provide all of these facilities, you may very well be missing some or many of the advantages of true CM.

WHEN TO USE CM*: When your present production facilities or certain departments are not keeping up with current market demands, or you wish to experiment in or expand into new markets, you face the capital expenditure for additional plant space and equipment. Perhaps this is the wisest move and perhaps not, but the answer can be very accurately determined by comparing your planned costs and investments with the costs of a really complete Contract Manufacturer. This would apply whether you were looking for component parts or complete product assemblies. There is no guess-work because CM is done on firm contracts based on firm quotations.

WHAT CM* CAN DO FOR YOU: When you deal with a true Contract Manufacturer you are receiving the benefits of the know-how, production experience and design ingenuity of a substantial organization. Their ideas on re-design for simpler and less costly production, their ability to research and develop patents for you, their ability to produce quickly and their very firm code of dealing with you in absolute confidence makes your Contract Manufacturer an integral part of your product success without your having to invest a single dollar in capital improvements.

You need use CM, or any special department of CM, only when you need it. Your production costs do not pyramid due to down time. CM improves products and component parts for every customer . . . if it did not, CM would not be the growing business it is.

CM* and THE OILJAK MANUFACTURING COMPANY: When you deal with Oiljak you will enjoy every benefit of CM. Oiljak is a complete Contract Manufacturer with over 25 years experience in working for and with many famous trade names. While true Contract Manufacturing is not exclusive with Oiljak—there are other true Contract Manufacturers and good ones—we do feel that you will benefit from and enjoy working with us. Drop us a letter or give us a call on the phone. Without any obligation whatsoever we are always ready to sit down and discuss problems . . . and always ready with the best answer we can possibly give.



FOR OVER 25 YEARS—COMPLETE CONTRACT SERVICES . . . FROM
BLUEPRINT TO FINISHED PRODUCT FOR MANY FAMOUS TRADE NAMES

24 DEPOT SQUARE, MONTCLAIR, NEW JERSEY

The only thing that hasn't been growing in the steel industry has been inventories. The demand from steel consumers continued to expand in May and June at a faster rate than output. Preliminary information pointed to the production of a near-peak tonnage in June, slightly below the record in May. The widely held expectation of a price hike in July led to hasty re-orders for many items.

Another round of expansion in steel-making capacity was anticipated as many companies applied to the Office of Defense Management for certificates of necessity for accelerated amortization. A Department of Commerce study estimates that about 10 million additional tons of steel would be needed in case of national emergency. Steel companies have also projected additional capacity for the rising population and the growth in the per capita consumption of steel.

Although steel production came to about 57 million tons during the first half of 1955, most steel companies are not looking for total 1955 output to top the record level of 111.6 tons in 1953. However, production is widely expected to be near 90 per cent of capacity during the third quarter when vacation and maintenance work usually cut

output noticeably in steel mills.

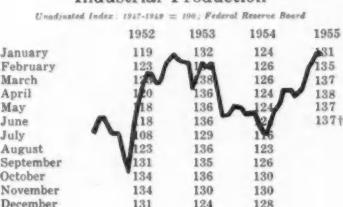
Despite some scattered cutbacks in ordering by auto-makers, steel companies see no slackness in overall demand since many other types of steel—structural, appliance, pipe, rails, oil country supplies—are eagerly sought.

The production of automobiles faltered slightly last month as labor unrest swept many plants. The output of passenger cars was moderately below the all-time high in May. The agreement on a new union contract by Ford and General Motors was interpreted as a vote of confidence by the auto-makers in the ability of the market to absorb new cars at or near the phenomenal rate of recent months.

During the first half of 1955 car production probably totalled about 4.2 million, a new record for any half-year period. The previous record had been scored in the last half of 1950 when 3.6 million cars were produced.

In early June the inventories of new cars totalled 840,000, a new peak. Industry spokesmen voiced little apprehension about new car inventories in light of recent sales records. While the buying of new cars declined 1 per cent in May when it usually rises, new records were set last month.

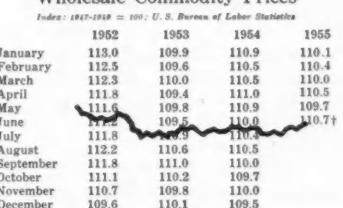
Industrial Production



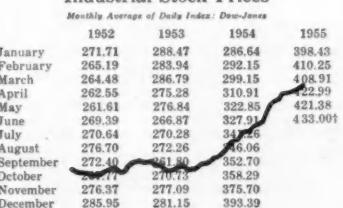
Consumer Price Index



Wholesale Commodity Prices

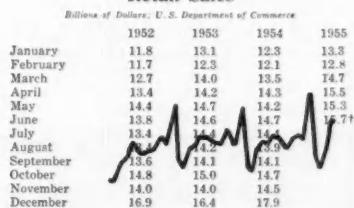


Industrial Stock Prices



Based on closing prices of 30 industrial stocks.

Retail Sales



*Approximation; figure from quoted source not available.

output noticeably in steel mills. Despite some scattered cutbacks in ordering by auto-makers, steel companies see no slackness in overall demand since many other types of steel—structural, appliance, pipe, rails, oil country supplies—are eagerly sought.

The production of automobiles faltered slightly last month as labor unrest swept many plants. The output of passenger cars was moderately below the all-time high in May. The agreement on a new union contract by Ford and General Motors was interpreted as a vote of confidence by the auto-makers in the ability of the market to absorb new cars at or near the phenomenal rate of recent months.

During the first half of 1955 car production probably totalled about 4.2 million, a new record for any half-year period. The previous record had been scored in the last half of 1950 when 3.6 million cars were produced.

In early June the inventories of new cars totalled 840,000, a new peak. Industry spokesmen voiced little apprehension about new car inventories in light of recent sales records. While the buying of new cars declined 1 per cent in May when it usually rises, new records were set last month.

How much more cash

working capital can
your business use...

\$25,000?

MILLIONS?

EXPERIENCE has proved that COMMERCIAL CREDIT is usually able to provide considerably more cash than is available from other sources. Important also is the fact that COMMERCIAL CREDIT provides funds continuously (if needed) without negotiations for renewal.

Our method is *quick*, with funds usually available within 3 to 5 days, no matter where the user is located in the U.S. It is *simple*, functions automatically without interfering with ownership or management. It is *reasonable* in cost, as there are no preliminary expenses, no long-term fixed commitments, and our one charge is a tax deductible expense.

Complete information about our plans may make it possible for you to take advantage of business opportunities that might otherwise be missed. For additional facts, write or phone the nearest COMMERCIAL CREDIT CORPORATION office below. Just say, "I'd like more information about the plan described in *"Dun's Review of Modern Industry."*"

BALTIMORE 1—200 W. Baltimore St.

LOS ANGELES 14—722 S. Spring St.

CHICAGO 6—222 W. Adams St.

NEW YORK 17—100 E. 42nd St.

SAN FRANCISCO 6—112 Pine St.

A Service Available Through Subsidiaries of
COMMERCIAL CREDIT COMPANY
Capital and Surplus Over \$175,000,000

**Wonderful things happen
to your office
when you choose chairs by**

STEELCASE

... wonderful things like seeing how attractive your office looks, with chairs Sunshine Styled in nature's most pleasing colors.

... profitable things like watching how, in so many little ways, overall efficiency increases.

... satisfying things, such as the peace-of-mind you enjoy, knowing that every Steelcase chair you purchased is guaranteed to give 100% satisfaction. Is it any wonder that for over 40 years, more people have bought Steelcase than any other make of steel chairs?



FREE . . . "Sunshine Styling"
... the most unusual, most dramatic office furniture brochure ever created.
Write Department A, or ask your local authorized Steelcase dealer.

STEELCASE INC

GRAND RAPIDS, MICHIGAN

WHENEVER YOU WANT TO MAKE A GOOD OFFICE
... A LITTLE BETTER



Early information from 140 cities in 46 States reflected very little change in inventories during May, so that the total in the beginning of June was probably close to the \$78.5 billion of the prior month, and down about \$1 billion from a year ago. In relations to total business sales, inventories are much smaller than they were two years ago when inventory slashing began. Some observers see little threat to the present boom until the stock-sales ratio approaches that of two years ago. However, in addition, there were then other deflationary factors—declining capital and Government spending—which are not expected in the months to come.

than they had been a year before. The most pronounced year-to-year gains were in manufacturing, which had provided 16.3 million jobs in May. This was up sharply from the low point of 15.8 million reached a year ago, but still down noticeably from the peak of 17.5 million in August 1953.

Year-to-year gains in employment were also scored by wholesale and retail trade (up 168,000), State and local government (up 145,000), and finance, insurance, and real estate (up 69,000), and service and miscellaneous (up 60,000). The few small declines in payrolls from a year ago were in mining, ordnance plants, communications, and a few other lines.

Unemployment probably rose less than usual last month, according to preliminary information from many parts of the nation. This would result in a further dip in the percentage of the labor force without jobs. In May 3.8 per cent of the labor force was jobless, a figure only mildly above the almost irreducible percentage of 3 per cent. The latest unemployment percentage compares most favorably with the post-war high figure of 7.6 per cent in February 1950.

While the largest concentrations of unemployment were in New York, Pennsylvania, and California, the States with the highest percentages of joblessness were Kentucky, Maine, and Rhode Island.

Letdown in Building?

The boom within the boom, construction, continued at lofty levels through May and well into June. Prospective home buyers seemed as avid as ever, although there appeared to be some resistance to high prices. Shortages of building materials, particularly cement, and sheet rock, appeared in some sections.

Signalling a steady activity in the months to come, building permits, as gathered by DUN & BRADSTREET Inc. in 217 cities, were at a near record level for the month in May and up 30 per cent from the level of a year ago. Housing starts in May were at the annual rate of 1.3 million homes as during the prior month, pointing to a volume for the entire year close to the 1.4 million homes started in 1950.

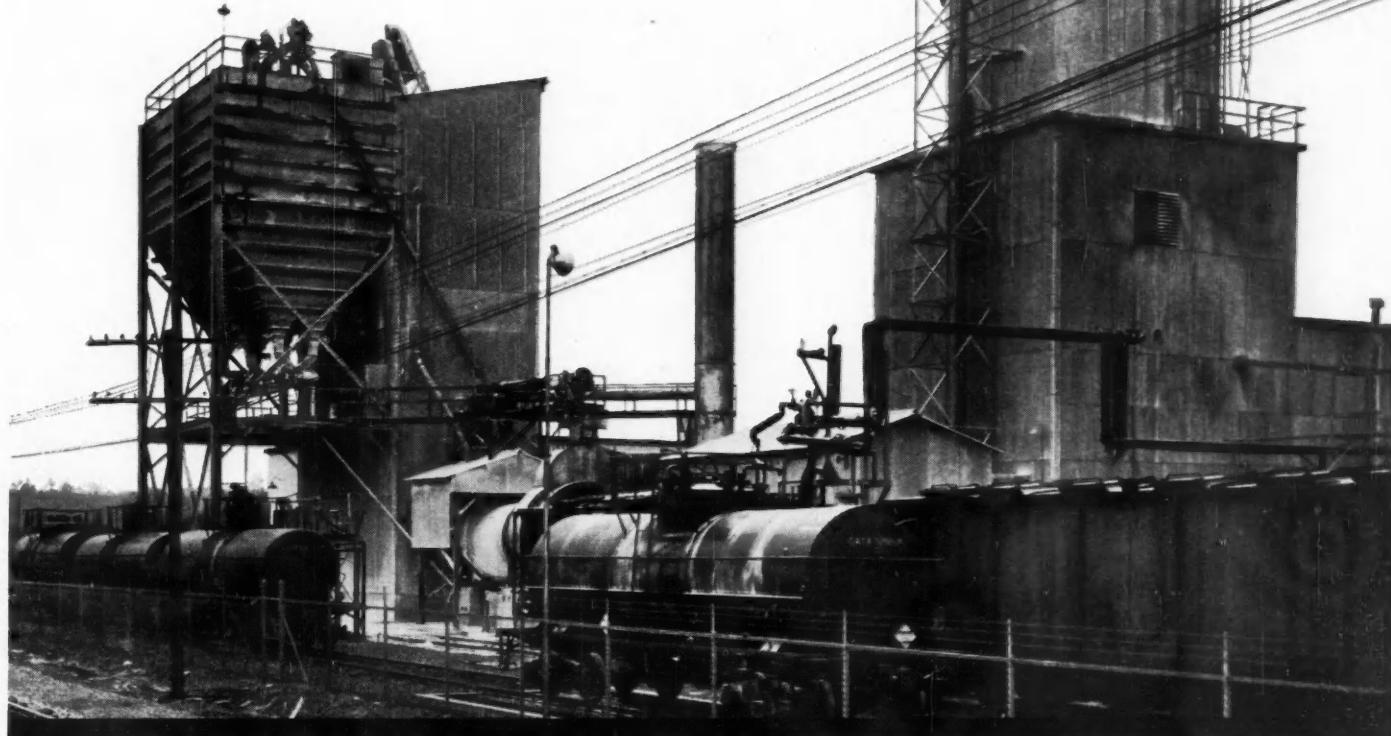
The unusually high market for

Longer Payrolls

Spot reports from DUN & BRADSTREET offices in 66 cities in 39 States pointed to a further rise in employment during June. The total number of jobs was apparently back to the all-time record level for the month of 63.6 million, previously reached in 1953 when the Government was spending heavily for the Korean conflict.

Jobs have reappeared in many lines from which they had vanished a year ago. Total non-agricultural payrolls last month were longer by almost 1 million jobs

**Where would you
go to make
sodium
tripolyphosphate?**



The Virginia-Carolina Chemical Corporation very sensibly decided that the best place to make such a product was near where it was used and after plotting the location of the chief detergent manufacturers it was apparent that their proposed new sodium tripolyphosphate plant should be near Cincinnati.

In line with present-day trends they wanted to avoid congested areas and get out in the country. Other requirements were: A good labor supply. Plenty of good water. Facilities for waste disposal. Electricity and natural gas. Soil with good load-bearing properties. Good roads and access to a railway with frequent pick-ups.

C & O's Industrial Development Department was able to take them right to a site on the outskirts of Cincinnati which met

every one of these requirements and had a few other unexpected advantages.

Although Virginia-Carolina looked at over fifty other locations, none of the others met their needs as well as this one at Fernald, Ohio.

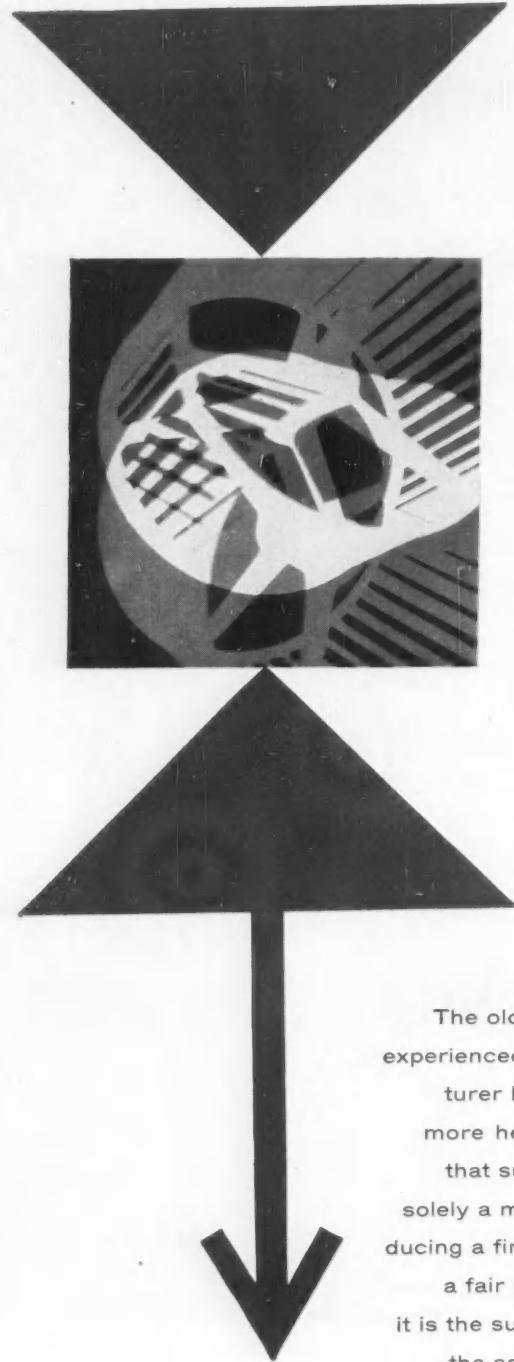
When you are looking for a site you will probably save yourself a lot of time and worry by giving the C & O a complete list of your requirements and let them do the looking. They will come back with a Pin-Point Survey full of just the detailed information you want.

Send your inquiry in complete confidence to Chesapeake and Ohio Railway, Industrial Development Department, Cleveland 1, Ohio.



Chesapeake and Ohio Railway

SERVING: VIRGINIA • WEST VIRGINIA • KENTUCKY • OHIO
INDIANA • MICHIGAN • SOUTHERN ONTARIO



The older and more experienced a manufacturer becomes, the more he appreciates that success is not solely a matter of producing a fine product at a fair price. Rather it is the sum total of all the services, great and small, which he renders to his customers day by day and throughout the years.



THE TORRINGTON MANUFACTURING COMPANY
TORRINGTON, CONNECTICUT
VAN NUYS, CALIFORNIA • OAKVILLE, ONTARIO

new homes, which some people feel is too good to last, has been the subject of many studies in recent months. Most studies conclude that the present level of more than 1 million new homes per year will probably continue at least to the end of the decade. This is the assumption for the expansion of capacity in the brick and tile industry which called in economist Robinson Newcomb to measure the market. The largest builder in the nation, National Homes Corporation, sees a continuation of the present high level until 1960 when another upsurge will begin. The Twentieth Century Fund's monumental study, *America's Needs and Resources*, concludes that there will be a demand for 1.2 million homes a year at least until 1960.

A stimulating study, "Is the Housing Boom Dangerous?" by Professor Robert O. Harvey, concludes that it certainly is not. In the May issue of *Current Economic Comment* (University of Illinois), he insists that the historical building cycle is largely a product of inadequate statistical data and that the present boom is the result of

long-term healthy shifts in the economy and not of temporary stimuli.

Busy Counters

Cash registers chattered busily last month as shoppers sent total retail volume up to a new peak for the month of June. As during recent months, consumers spent a larger share of their incomes for durables than they did a year ago. Expenditures for large-ticket items usually rise with consumer confidence about the job outlook.

As during most of the last year, the largest year-to-year gains in May retail trade were scored by automobile dealers. The sales of automobiles and parts were up 20 per cent from May 1954, while total retail trade was up 8 per cent. While department stores sold 17 per cent more than a year ago and furniture and appliance dealers sold 9 per cent more, food stores managed to top last year by only 1 per cent. However, supermarket chains were up 9 per cent. In virtually all lines, retailers sold more goods in the first half of 1955 than ever before. With personal income at rec-

SMART ACCESSORIES to modern interior furnishings



Loewy style with 17" tray \$94.90*



STANLEY De Luxe... \$69.50*
With Tray..... \$78.90*

Climax Club Smokers

The simplicity which characterizes Climax Club Smokers makes these handsomely crafted ash receivers appropriate for any modern interior where functional design and elegance are basic considerations. Styles and typical installations in famous places are shown in the new 1955 catalog. Ask for brochure 7-DR.

*Prices f.o.b. factory

ARNOLT CORPORATION WARSAW INDIANA, U.S.A.



You are looking at 14 gold-plated garbage cans



Special orders for the Texas-oilman trade? Guess again.

Fact is, each is priced *below* competition. The factory's turning out several thousand this month, for a new customer.

Unfortunately, the gold-plating doesn't show up on the product. Or anywhere else. It's concealed in a cloud of figures covering a month's operations for the whole factory. Weeks from today, somebody'll discover that the company lost money on the order . . . maybe even how *much* money. But the damage is done now.

This story could have had a happy ending — with Keysort punched-card accounting. Keysort job-costing cards could have

computed a correct, profit-included selling price. The same cards would have shown the plant manager how costs were running at each step in manufacture. He'd have spotted any impending loss *on time* . . . used his know-how to eke out a profit.

A McBee Keysort installation can give you comprehensive, accurate reports on every phase of factory operation, and give them to you *fast*. On your desk monthly, weekly, daily — as your needs require. Whether you run an industrial giant or a 100-man branch plant. At very low cost.

The McBee man near you can show you how it's done. *It will take him one hour, from start to finish.* Phone him or write us.

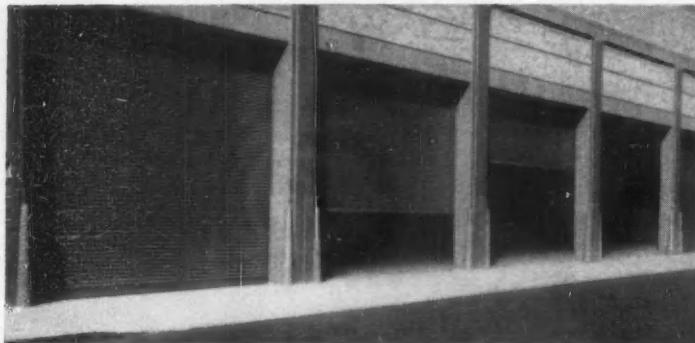
McBEE KEYSORT®

Punched-card accounting for any business

Manufactured exclusively by **The McBee Company, Athens, Ohio** • Division of Royal McBee Corporation
Offices in principal cities • In Canada: The McBee Company, Ltd., 179 Bartley Drive, Toronto 16, Ontario

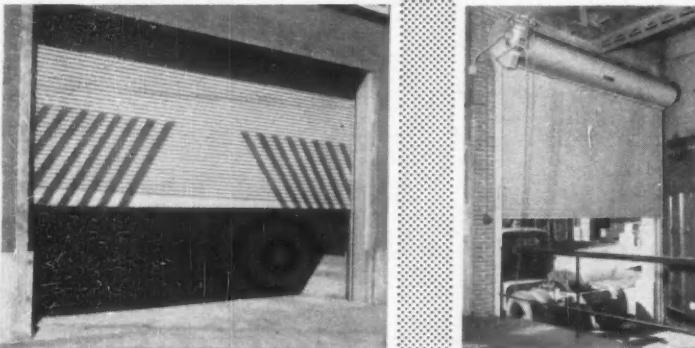
Kinnear Steel Rolling Doors

(made by the originators of the famous interlocking steel-slat door)



give you highest efficiency,

(they open straight up, coil overhead, waste no floor or wall space)

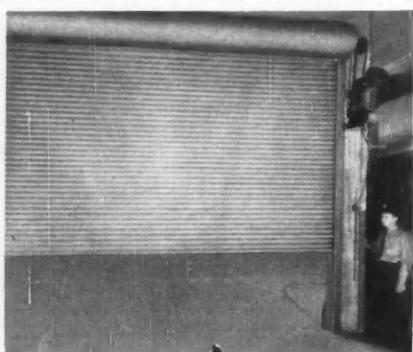


extra all-metal protection,

(their rugged steel construction resists fire, wind, theft, vandalism)



Heavy galvanizing adds 1.25 oz. of pure zinc per sq. ft. of metal by ASTM standards.



and lower operating costs

(delivering up to 20, 30, and 40 years of continuous daily service with little or no repair costs, as proved by many case records in Kinnear's files.)

Kinnear Rolling Doors are built any size, for old or new buildings, with manual, chain, crank or motor operation. Write for complete information.)

THE KINNEAR MFG. CO.

FACTORIES:

1503-20 Fields Avenue, Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in All Principal Cities

KINNEAR
ROLLING DOORS



ord level and further evidence of rises to come, there was scant indication of an early dip in trade.

Failures Rise

Business failures rose 6 per cent in May to 955, the second largest total in the last twelve months, and the highest May level since 1942. However, they were well below the 1238 in 1940.

Failures in construction climbed to the highest point since December 1954. The only decline in failures among manufacturers was in concerns producing stone, clay, and glass products. The rise in retail failures centered in food stores, where they rose for the third straight month, to the highest level since 1942.

The rise in failures was concentrated in four of the nine regions: Middle Atlantic, South Atlantic, East North Central, and Pacific States. A new record high was reached in the Pacific States. These regions had more failures than a year ago: New England, East North Central, and Pacific States. Connecticut, Wisconsin, Washington, and California were largely responsible. The most notable year-to-year decline in failures was in Texas. Chicago and Seattle had the heaviest failures so far this year.

THE FAILURE RECORD

	May 1955	April 1955	May 1954	P.C. Chg.†
DUN'S FAILURE INDEX*	43.7	39.7	43.1	+ 1
Unadjusted.....				
Adjusted.....				
Seasonally.....	41.6	36.8	41.0	+ 1
NUMBER OF FAILURES.....	955	903	943	+ 1
NUMBER BY SIZE OF DEBT				
Under \$5,000....	163	159	149	+ 9
\$5,000-\$25,000....	484	469	482	+ 0
\$25,000-\$100,000....	253	216	243	+ 4
\$100,000 and over....	55	59	69	-20
NUMBER BY INDUSTRY GROUPS				
Manufacturing....	168	154	200	-16
Wholesale Trade....	87	93	91	-4
Retail Trade....	499	484	460	+ 8
Construction....	121	106	111	+ 9
Commercial Service....	80	66	81	-1
(LIABILITIES in thousands)				
CURRENT.....	\$34,714	\$35,968	\$38,494	-10
TOTAL.....	34,840	36,299	39,068	-11

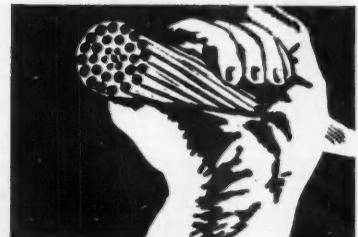
*Apparent annual failures per 10,000 listed enterprises, formerly called DUN'S INSOLVENCY INDEX.

†Per cent change, May 1955 from May 1954

BUSINESS FAILURES include those businesses that ceased operations following assignment or bankruptcy; ceased with loss to creditors after such actions as execution, foreclosure, or attachment; voluntarily withdrew leaving unpaid obligations; were involved in court actions such as receivership, reorganization, or arrangement; or voluntarily compromised with creditors out of court.

CURRENT LIABILITIES, as used in the Failure Record, have a special meaning; they include all accounts and notes payable and all obligations, whether in secured form or not, known to be held by banks, officers, affiliated companies, supplying companies, or the Government. They do not include long-term, publicly held obligations. Offsetting assets are not taken into account.

MOTION PICTURES



work For Industry

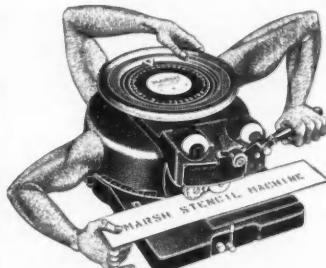
They may be the tools you need to solve your specific business or sales problem.

Find out how a well-planned Dynamic Film can fit into your production or sales picture ... Write for our Case History File of Dynamic Films at work in Industry.

A moderate budget can put top quality, fully effective Dynamic produced motion pictures to work for you.

Creative thinking on film

dynamic films, inc.
1112 West 89th St., N.Y. 24, N.Y.
1714 Huldy, Houston 19, Texas



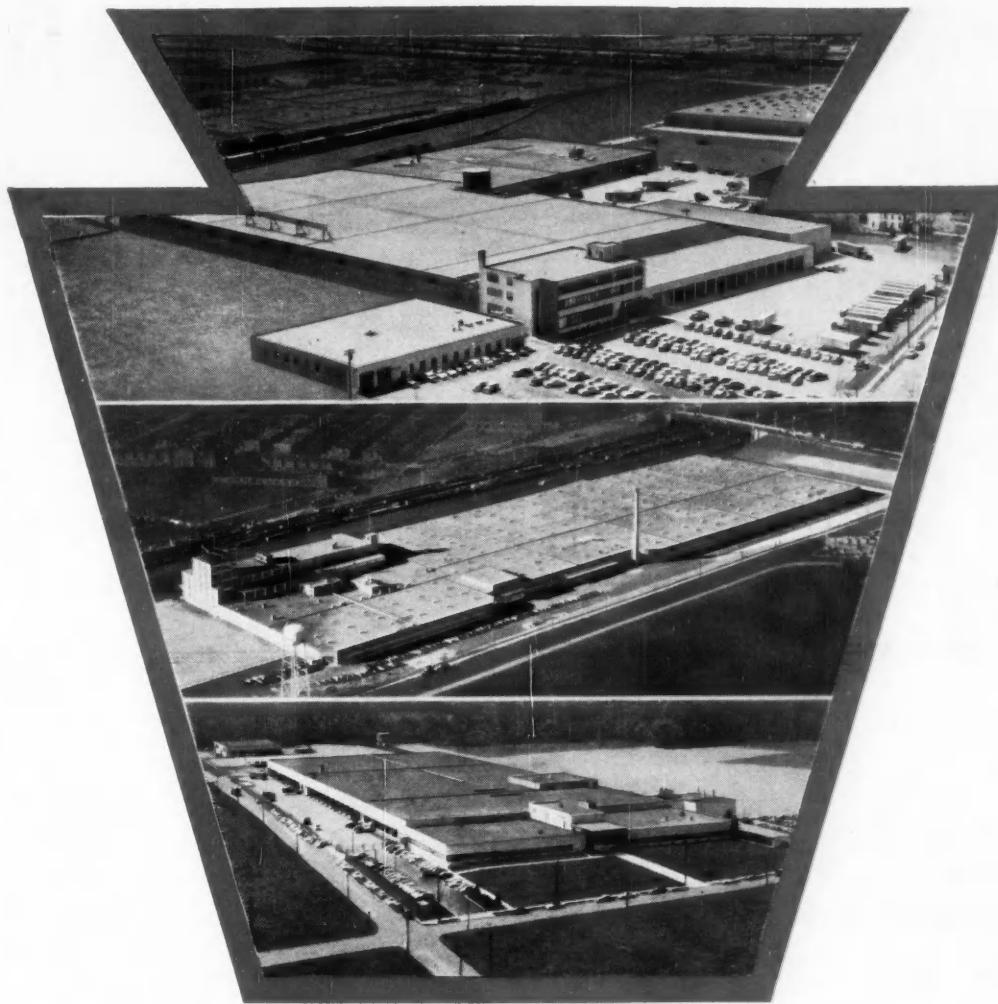
MARSHIANS AID MILITARY ACADEMY IN UNITED STATES

Identification problem solved at famous Morgan Park Military Academy, Chicago. Cadets now permanently mark equipment and supplies with inexpensive Marsh Stencils.

Fast, legible stencil marking will speed your product handling, too. Low cost Marsh Stencil addressing eliminates shipping losses and delays.

FREE: Stencil cut with YOUR NAME, ADDRESS; and "The Marshian Story." Clip this ad to business letterhead, with your name. MAIL TODAY! MARSH STENCIL MACHINE COMPANY, 62 Marsh Building, Belleville, Ill. U. S. A. 67

MARSH STENCILS
DELIVER THE GOODS



**Not by chance—but by design are
more modern Food Warehouses like these
located on the Pennsylvania Railroad**

- ★ Most reliable, on-time transportation service
- ★ Fast, direct access to food packers, meat processors, fruit and vegetable growers
- ★ Centrally located for quick shipments to consuming market
- ★ Provides fast, efficient, on-time diversion and reconsignment service of carloads in transit

*Here's
Why*

- ★ The PRR serves more communities and a greater population than any other transportation system
- ★ Immediate access to arterial highways
- ★ Valuable cooperation of PRR's Industrial Department—which will gladly assist you in locating just as advantageously

*Desirable plant and warehousing sites are available. Consult any of the Pennsylvania Railroad Industrial Agents listed here.
Your inquiry will be treated in strictest confidence.*

CHICAGO
C. D. WILKINS
Union Station
Central 6-7200
Ext. 268

INDIANAPOLIS
V. J. FLOYD
Union Station
PLaza 9331
Ext. 375

PITTSBURGH
H. C. MILLMAN
Penna. Station
GRant 1-6000
Ext. 688

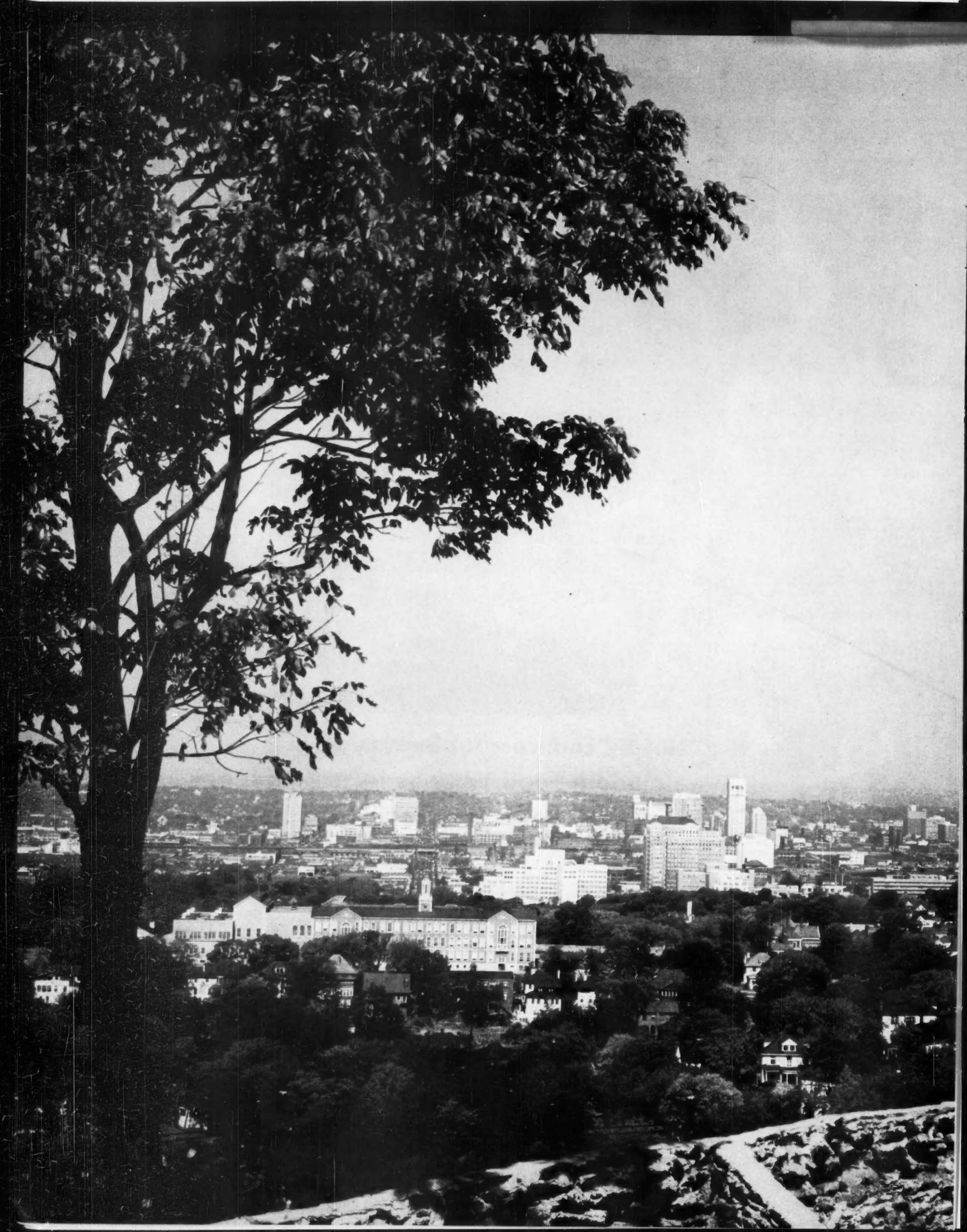
CLEVELAND
R. REAM
Pennsylvania Station
ENDicott 1-2121
Ext. 8011

PHILADELPHIA
A. J. VONK
Pennsylvania Station—30th St.
EVergreen 2-1000
Ext. 3981

NEW YORK
F. J. HASSON
Pennsylvania Station
PAcific 6-6000
Ext. 2471

D. B. LENNY, General Industrial Agent, Suburban Station Bldg., Philadelphia 4, Pa.
EVergreen 2-1000

Pennsylvania Railroad





DEVANEY PHOTOGRAPH

The Decision to Take

THE ROAD TO DECENTRALIZATION IS A BIG ONE AND SHOULD BE CAREFULLY CONSIDERED IN THE LIGHT OF PRESENT CIRCUMSTANCES AND STATUS. THE PAST EXPERIENCES OF ONE COMPANY SHOW THAT THE WAY IS NOT ALWAYS SMOOTH AND THAT THERE ARE LIMITATIONS TO BENEFITS. BUT SUCH EXPERIENCES MAY PROVE HELPFUL GUIDEPOSTS TO THOSE WHO CONTEMPLATE TAKING THE GIANT STEP.

How Much Decentralization?

GEORGE F. SMITH
President, Johnson & Johnson Co.

LARGELY as a result of managerial decentralization the sales growth of Johnson & Johnson rose from about \$20 million dollars worldwide in 1932 to \$243 million in 1954—some twelvefold. Inaugurated by Robert W. Johnson when he became general manager of the company in 1930, the program then was considered a bold innovation by business observers and even to-day can scarcely be classified as a blueprint for all manufacturers to follow.

Industrial decentralization has obviously proved a blessing to Johnson & Johnson and we seem to have the reputation of being one of its foremost proponents. But a word to the wise from the experience of our company in two divergent situations that demonstrated that decentralization of production facilities is not always a completely unmitigated blessing. This technique should be entered into cautiously and adopted only where the facts justify its use.

Decentralization may be either geographic or managerial or both. Geographic when applied to the establishment of plants or facilities at several locations; managerial when responsibility and authority is delegated so that decisions can be made at the lowest level of supervision consistent with company policy and the competency of the individuals involved.

Why and when should an industrial firm decide to decentralize? When and where should it

hold on to centralized operations? Perhaps Johnson & Johnson's experiences over the past quarter of a century will throw light on these questions.

Prior to the advent of Robert W. Johnson at the helm of our company in 1930, there had been one man, fortunately a very able one, trying to spread his thinking and his energies over a large line of products. Inevitably some products were neglected and despite a healthy overall growth throughout the years, many opportunities were lost.

No single person was equal to the multiplicity of challenges that existed. And this is a key to the value of decentralized management in the growth of a great corporation.

Robert Johnson recognized this in creating one of the first Product Director systems of its kind. The large line of J & J products was divided into seven or eight related groups, each in charge of a director who was in effect the general manager of his particular segment of the business. Thus we were able to concentrate on the sales opportunities of the entire line without neglecting any part of it. This obvious—but up to then generally unused—management technique produced gratifying results.

As in all innovations the road was not always smooth. It is easier to draw up an impressive organization chart based on sound principles

than to find executives capable of handling the responsibilities created. Each man had to be able to show the way to better products, lower costs, superior packaging, and more efficient promotion and selling techniques. Some men fell by the wayside. Gradually, though, the basically sound decentralized management technique was made to work well, and the company was on the way to a degree of success that would have been impossible with the old, one-man type of management.

It is an important point that decentralization helps create leaders. It enables a qualified man to gain results not ordinarily possible in an overlarge, complex, centralized organization. It provides him with opportunities for growth and the stimulation of recognition when he does his job well. By the same token, the unqualified man is more likely to be spotted as such when he is on his own.

While this technique is not a cure-all for every industrial firm, it also need not be limited to the Product Director concept. Managerial decentralization can usually extend to other phases of the business organization; for generally it is recognized that with the size and complexity of business operations to-day, the decision-making powers and responsibilities should be delegated as much as practical. And this is the basic principle of decentralization.

The success of decentralized management may or may not require or justify decentralized plants. There is a distinct difference between managerial decentralization and the geographical decentralization of physical plants.

An example of practical plant decentralization involves our textile manufacturing operations. Prior to 1932 these had been set up in separate establishments, and to-day we have nine such mills in New England, New Jersey, the Midwest, and the South. These operations were decentralized because they did not and do not now harmonize with the other parts of our business. The labor factor is a large element of total cost, and it was unrealistic to ignore the lower wage rates that are necessarily common to the textile industry. Had our textile operations remained as a part of our package merchandising production facilities, the situation might have been harmful to both.

Another instance of plant decentralization occurred in 1933. In that year our New Brunswick, N. J. facilities were substantially at capacity. We faced the alternatives of a large investment at the eastern plant or instead the establishment of a midwestern production unit. This was an easy decision, because despite a slightly higher transportation cost on raw materials, the savings on the shipment of finished goods were so large that the new Chicago plant paid for itself in less than ten years.

Primary Saving

There were many side benefits from this midwestern installation. One was the development of a friendly rivalry between New Brunswick and Chicago production executives. The fundamental justification for the new plant, however, was the large freight cost saving which that unit made possible while relieving the overtaxed production facilities at New Brunswick.

A third example of justified plant decentralization was in our Industrial Tape Division. This was a stepchild in our surgical tape division until Duco was invented and the spray gun replaced the paint brush to a large extent. Lacquer spraying called for masking paper which was first held in place by surgical tape, the only kind available. Special impermeable paper tapes were devised and that started the parade of new tapes ranging from those of paper, cloth, cellophane, cellulose, acetate, and other films to metal foils and glass fiber.

These tapes required production equipment unlike that used to make surgical tape. The research and technical problems were different. A separate sales staff was required and there were other unusual problems involved.

It was clear that these conditions could not be met except through a completely separate organization, with specialized facilities. Thus what is now known as our Permacel Tape Corporation was ultimately housed in its own new building and has continued to grow until to-day that subsidiary company does more business than Johnson & Johnson as a whole did in 1930.

Permacel Tape's history is duplicated in varying degrees in our Personal Products Corporation, Ethicon Sutures, Inc., Ortho Pharmaceutical Corporation, and in other affiliated companies.

It might be noteworthy that all of the affiliated companies were established and now operate as separate decentralized units both in management and physical plant. Each has its own management who run their own show and make their own decisions on matters affecting their own company. The Executive Committee of the holding corporation exercises control and jurisdiction only in extraordinary situations.

Just to touch on our overseas plants, which include manufacturing operations on all of the six continents, I believe that without that geographical decentralization we would not now enjoy approximately \$45 million in overseas business. Because of the nature of our products and the duty rates involved, it is not feasible to rely, except to a limited extent, on exports from the United States.

Limitations

Now what are the pitfalls to be considered to avoid unjustified decentralization of production facilities? We and others have learned that this technique is no panacea. In fact, if misused, it can represent the road to a large volume of red ink.

We have had two such instances—one we entered into voluntarily, and the other was forced on us by the circumstances of war. There are noteworthy facts in each case. They serve to point up the disadvantages of unwarranted decentralization, and particularly the high costs that are involved.

In 1946 we had completed the development of plans for significantly better machines and processes for one of our important manufacturing divisions. The plans provided for an almost push-button type of production which would not only greatly reduce costs but also assure notable improvement in product quality. It was quite easy to install the new equipment in our Chicago plant which had now grown to several times its 1933 size. The very old New Brunswick buildings, however, presented a serious problem.

When it was clear that a fantastically high investment in a virtual reconstruction of an ancient New Brunswick building would be necessary to accommodate the newly designed machines and processes, we considered the alternative of a separate eastern manufacturing plant for this division. As this would cost relatively little more than a major reconstruction of old buildings, we decided to construct the new facility. There really wasn't much choice, and we felt certain that we could sell the new plant at a good price if the operation were later reintegrated into the new large parent company plant which some day we would build, a plant centralized geographically but decentralized as to its management.

You will remember the philosophy of some people who, in the 1940's, voiced the view that a small plant could be more efficient than a large one. I am sure there is a point where a particular plant can be too large but none of us was concerned that this 1946 eastern plant would be too large. And fortunately with almost identical facilities in our large integrated Chicago plant and in the separate new plant, we knew we could tell precisely what, if any, difference existed. The divisional management in the East and in our Chicago department were substantially equal in ability and so we had a good basis for comparison of results.

To sum up the situation in a few words, the integrated unit at Chicago has consistently achieved lower product costs than the eastern divisional plant.

Problem Points

The reasons for the differences in cost between the two operations serve to point up some of the problems involved in plant decentralization.

1. In geographically decentralized operations each unit must contain sufficient floor area for peak production requirements. In a centralized plant this need can be shared by a number of units with a correspondingly lower total floor space requirement.

2. A factory must have room for the reasonable ultimate in the way of expansion. And the sum total of land for expansion is greater in a number of decentralized units than in an integrated operation.

3. Then there is a multiplicity of extra personnel and extra facilities. The eastern unit has its own cafeteria when it would be cheaper to share the accommodation with other units. A decentralized plant must pay the full cost of its separate utilities; its own receiving, shipping, and other departments, many of which are economically too small. The receptionist, the watchmen, and others whose number does not proportionately reduce with the size of the plant are examples of costs involving extra personnel.

4. In addition, the products involved are not shipped by themselves but are consolidated with other goods on a customer's order. The eastern production must be transported to our distribution center at Edison, N. J. In Chicago this expense is relatively slight.

This is not the complete story of the cost difference, but offers an idea of the extra fixed costs and operating expenses that must be considered in evaluating a decentralized unit.

The other example of unjustified decentralization of plant was forced on us. We had helped develop and we were to be the principal supplier of atomic bomb burn dressings. The Armed Forces were understandably anxious to have these dressings produced in an area less vulnerable than New Brunswick or Chicago.

A southwestern site was chosen, and we proceeded with an all-out program to get into production as soon as possible. Fortunately a suit-

Continued on page 42



*M*ANAGEMENT DECISIONS MUST BE BASED ON A SOUND, REALISTIC APPRAISAL OF A BUSINESS' PROBLEMS. IMPORTANT TO SUCH AN APPRAISAL ARE SUITABLE FINANCIAL REPORTS. HOW CAN CASH REPORTING SYSTEMS BE USED WITHOUT LEADING TO THE ACCUMULATION OF NON-PRODUCTIVE FUNDS? HOW CAN TAXES BE MINIMIZED WITHOUT DAMAGING PERMANENT GROWTH? HOW CAN THE EFFECTS OF THE BUSINESS CYCLE BE BROUGHT INTO REASONABLE PERSPECTIVE WHEN LIFO AND DIRECT COSTING SYSTEMS ARE USED? HERE ARE THE ANSWERS TO THESE AND OTHER RELATED QUESTIONS.

Effective Reports for Sound Decisions

D. S. MOFFITT
Controller, The Connecticut Hard Rubber Co.

ONE day last Autumn, two corporate presidents were sitting together in a club car on a train speeding out of Chicago. They were discussing the influence their accountants have on the operation of their respective businesses. The older of the two executives, a graying man of 35 years'

experience in his field, stoutly maintained that his accountant had little or no influence on the way he ran his company. As he put it, "I know what I've set out to achieve, and it doesn't take an accountant to tell me whether I've gotten there or not." The younger man took the other side of the argument. He claimed that the financial reports he received were of great assistance to him in his day-to-day work. Needless to say, these were two points of view that were not resolved that evening.

The argument as to whether management is affected more by the figures than the figures are affected by management is one which will probably go on as long as the argument about the chicken and the egg. The older man was on the right track when he realized that financial reporting is merely a mirror of the enterprise's activities. Properly drawn up, a good financial report will show how well the company per-

formed in relation to its stated goal. However, there may be harmful side effects to reaching that goal which would not show up in a financial report designed only to emphasize that goal. Perhaps it is this last point that the younger company president was talking about.

Top management establishes the financial goal of the enterprise, ultimately determining what method of accounting and financial reporting is to be used. While the operating details of this method may be worked out by other than top management, the method usually is in conformance with the goal management has established.

The Du Pont chart system, which is described in detail later on, was developed specifically to report to the Du Pont executive committee their defined goal for a specific return on gross assets. This return on gross assets certainly seems to be the soundest financial goal from an economic standpoint. Nevertheless, despite its soundness, many firms, because of more pressing troubles elsewhere, have yet to adopt it.

The growing firm with no source of capital but retained income may well try to minimize the income tax bill ahead of other considerations. Another growing concern whose working capital is strained may put restoration of good financial position ahead of aiming at a specific profit goal. Varied reports are needed.

In to-day's economy, there is not always a surplus of cash available, sometimes not even enough to meet payrolls or trade debt properly.

Expanding companies in particular often find themselves in a squeeze for cash, even when putting all profits back into the business, because expansion requires more working capital as well as added equipment, the payments for which take many years to recoup through depreciation.

A contrast in financial methods was reflected recently in the pages of a New York newspaper. Side by side there were two stories. The first was about a large and healthy organization that had completed negotiations for a multimillion-dollar loan for working capital only. It had been short of cash. The other story was of the sale of a large and well-equipped plant by a man who was an immigrant and had built it up from nothing. In building up this magnificent structure, the seller had never had outside financing, nor had he ever been once to a bank for a loan. He had, the story went on, a little black book in which he plotted the cash implications of his every move, and he had arranged things to have cash on hand at all times. How the immigrant manufacturer had kept his accounts in his little black book was not explained. However, there are many good reporting methods that stress cash changes.

The most widely known method of reporting cash changes is the statement of source and application of funds, or, for short, the funds statement. Simply, the funds statement shows in two

Continued on page 72



WILLIAMS PHOTOGRAPH

New trend IN DESIGN?

ANNESTA R. GARDNER
Industrial Editor

IS INDUSTRY squaring the circle? It's beginning to look that way. Rounded contours are giving way to more-angular forms in both consumer and industrial products.

Why? One reason is the high cost of space.

The consumer wants products that will nest snugly together and take up as little room as possible. The circular product just doesn't fit.

In industry, too, floor space is at a premium, and space-saving equipment designs are warmly welcomed.

At the same time, there is a growing demand from both consumer and industrial users for good looking, easy-to-maintain equipment without unnecessary frills and furbelows. Again, squarer, simpler outlines fill the bill.

This is good news for makers of industrial equipment which is produced in moderate quantities and can't support the costly tooling often required for complex shapes. Squared outlines are usually easier and cheaper to make. And, when they're well styled, they're just as attractive as "streamlined" designs.

Indeed, as one expert puts it: When such simple easy-to-reproduce forms are in fashion, no manufacturer can afford to overlook the oppor-

tunities for increased sales and greater user satisfaction that good styling can bring.

How deep is the trend toward straighter lines and sharper angles—and how widespread? As the pictures on pages 36 and 37 indicate, it seems to extend all the way from bread boxes to tractor shovels.

Look at the Motorola portable radio at the top of page 36 and note the trapezoidal face design, the rectangular handle, and the flatness of the case. Only the corners are rounded—for safety as well as strength. A few years ago, many radios of this type practically rippled with circles. Discs surrounded circular dials; handles were loop-shaped.

This does not mean that every product can or should resemble a slab of concrete, or that corners should be needle sharp. (That's often bad from the safety and durability as well as the appearance point of view.) But spherical, cylindrical outlines are giving way to flatter, smoother surfaces with only moderate radii at edges and corners.

In many cases, circular and squared elements are being combined. The 1955 Lewyt vacuum cleaner, for instance, couples a new cube-shaped

container with its big new circular wheels. Likewise, Toledo Scale has retained the traditionally circular dial while making the column and pedestal of its newest unit (see page 37) decidedly angular in appearance. Ansul, too, combines square and cylindrical elements in its dry chemical fire extinguisher.

The AiResearch activator pictured on page 37 illustrates another way to achieve a squarer outline. It retains the cylindrical shape of the motor, but sinks it between the end posts—saving space as well as improving appearance. At the same time, other engineering changes (including adoption of a magnesium housing) have made it possible to cut weight as well as size almost in half.

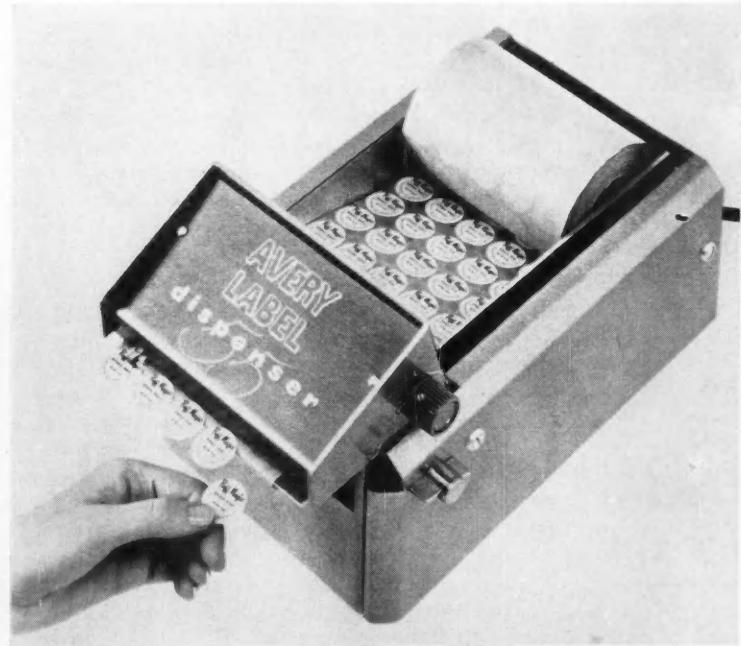
As a matter of fact, in almost all of the products pictured here, the change in outward appearance is accompanied by improvements in operating features, ease of installation and maintenance, durability, and other key features. The style change is the spark, but the sales fire is fed by many new ideas. They're ideas that can be applied to many products, as can be seen on the following three pages.

Continued on page 36

Straightlined for sales



Sharper angles and flat surfaces are appearing even on products that are basically round, as this Loewy-styled Ansul fire extinguisher shows.



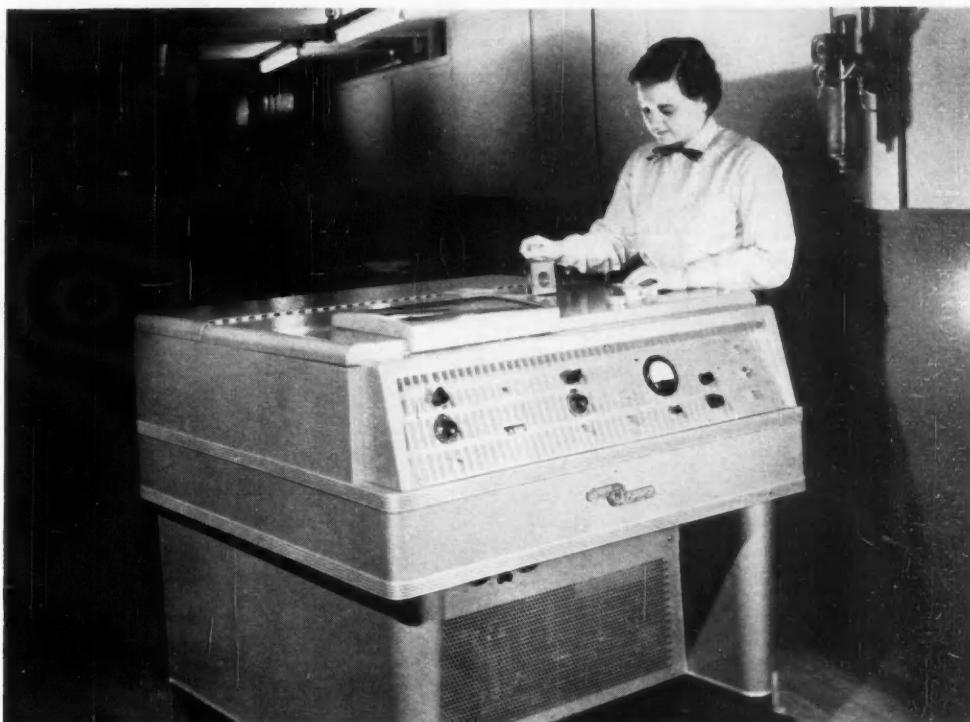
First commercial model of new, lightweight, automatic Avery label dispenser is frankly simple in design, easy to make, yet clean looking.

**STRAIGHTER LINES,
SHARPER ANGLES, ARE
APPEARING IN A WIDE
RANGE OF PRODUCTS.
IT LOOKS LIKE
A GROWING TREND.**

These have new angles

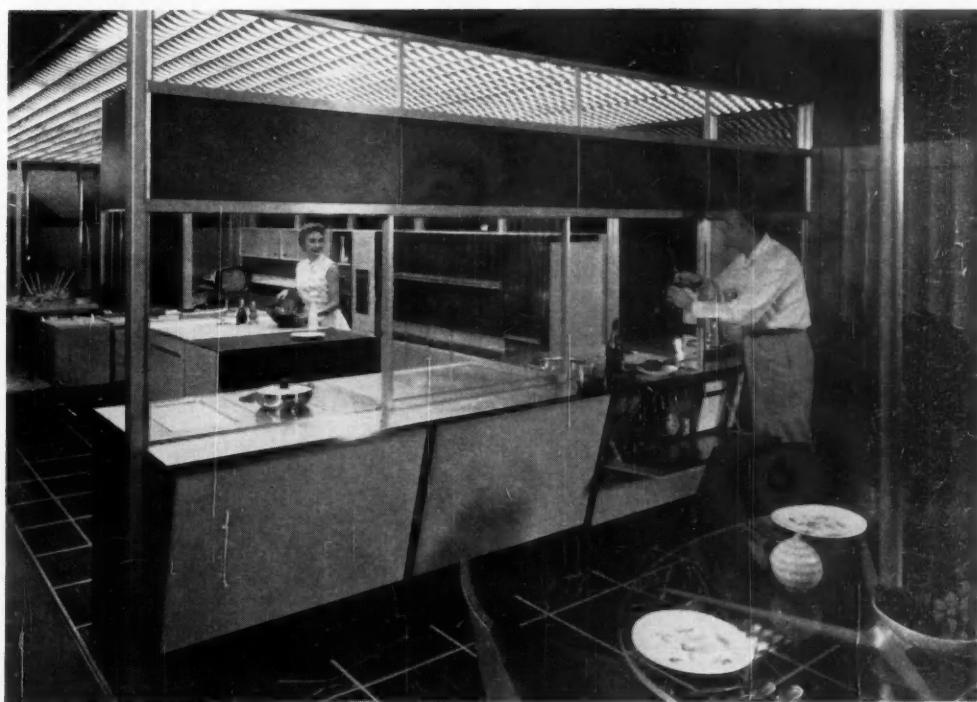
Attractive appearance and flexibility of design are achieved at minimum tooling cost in this Baird infrared spectrophotometer, styled by industrial designer John David Beinert. Housing sections can be brake-formed and welded with standard equipment; and the front panel is etched aluminum, rather than a stamped or embossed sheet. It is attractive and durable, yet it requires no special tooling. It can be made, and markings can be changed, just by making and reproducing a drawing. Other good design ideas: A holder is provided at the top of the unit for extra recording pens; the recorder itself is protected by a dust cover which snaps in place without screws or clamps and has a transparent plastic center section for full visibility while the instrument is in operation. The legs are vinyl-coated to eliminate unsightly paint-chipping; smooth surfaces and baked-on finish make unit easy to clean. The aluminum trim serves to cover the junction line between top and bottom, as well as to improve appearance. Units like this point up the growing recognition on the part of equipment-makers of the value of good styling in boosting sales, and bolstering user satisfaction.

This is Frigidaire's conception of the *Kitchen of To-morrow*, but it has ideas a-plenty for the products of to-day. Appliances are not only built into walls, but are designed to fold neatly away when not in use. Almost everything is operated electrically or hydraulically. Frigidaire crystal-gazers have even provided a motorized serving cart and an overhead-mounted traveling tray for handling bulky objects. The rotisserie oven is concealed in one of the base cabinets and is lifted by hydraulic power when needed. The cooking range is provided with two pairs of surface units which turn over by push-button control to provide a clean, flat working space when they are not in use. A single power unit concealed in the counter top has a power take-off shaft that can be used to operate a host of appliances—mixer, blender, potato peeler, juice extractor, shredder, slicer—permitting these units to be much simpler and less expensive than would otherwise be possible. Popularity of this kitchen on its coast-to-coast tour with the G-M Motorama is a strong hint to manufacturers of many kinds of products: Now is the time to adjust both styling and operating features so your company will be ready to meet demands for integrated units like these.



Industrial equipment like this Beinert-styled Baird spectrophotometer benefits from trend to

squierer lines. It is good looking as well as efficient, yet needs no special production tools.



Consumer products are squaring off to meet the demand for built-in, space-saving appliances.

It's a booming trend, as the popularity of this Frigidaire *Kitchen of Tomorrow* display is proving.

Industrial and products



Motorola portable offers added convenience as well as styling. Antenna-carrying handle swivels for best reception so set itself need not be moved.



Westinghouse food mixer departs from conventional cylindrical shape in favor of sharper lines. Even the beater blades are almost square.



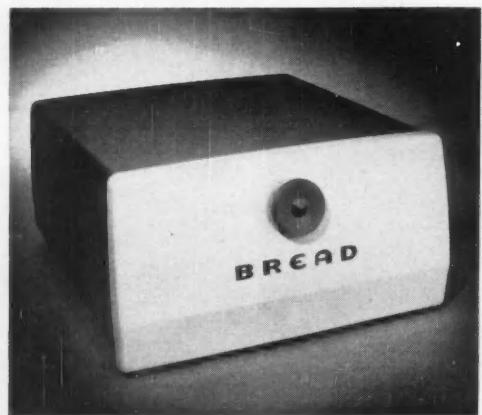
Telephone answering set, styled by Henry Dreyfuss for Bell Laboratories, shows how box can be made attractive by slanting lines.



Permaglas water heater features color, new silhouette, better controls. A. O. Smith styled it to look well in "upstairs" kitchen-utility areas.



Vacuum cleaner by Westinghouse is even more angular than mixer. Small-but-powerful portable appliances like these are increasingly popular.



Breadbox by Jean Reinecke won Koppers prize for good design in plastics. Federal Tool molds it in one piece, with an integral hinge.

Cubes, blocks, and pyramids are replacing circles, cylinders, and cones in a surprising number of consumer and industrial products, as the pictures on these pages show.

Note, for instance, the remarkable similarity between the plastic breadbox and the telephone-answering set (below, left). Both are new, and each was styled by a leading designer. They were working in different cities (one in New York and the other in Chicago) and on very different types of products. Yet the over-all outlines are much alike.

Squaring off isn't the only trend in design, of course. If the customer has simpler lines to choose from, he is certainly getting a larger selection of colors, materials, and finishes—refrigerators in half a dozen factory-applied colors; boats of light metal and reinforced plastics as well as steel; tool shanks of molded nylon and reinforced plastics as well as new alloys of the traditional metals.

And, over-all, product designers are striving for greater portability, durability, ease of operation, safety and ease of maintenance. Unit sub-assemblies which can be removed and replaced as a whole are increasingly popular—as are disposable parts and products.

In line with ease of operation, there is increasing use of instruction plates and instrumentation even on consumer products. A recently-introduced hand knitting machine, for instance, sports a regular mechanical counter mounted on the knitting board.

On the Motorola radio, the new rectangular handle not only fits in with the styling theme, but also makes the radio more convenient to use. The radio antenna is built in this handle which can be turned in any direction. Thus it's possible to adjust the radio for best reception without moving the case itself. (The handle locks in position for carrying, of course.) This radio also features plated circuits (see March 1954, page 48) and a pyroxilin-covered steel case.

Much is being done, too, to increase flexibility and mobility of products which are not small enough or light enough to be portable in the usual sense. This year, for instance, one manufacturer of air conditioners is offering a unit that can be installed in "twenty minutes from carton to full operation" without any permanent connections to, or holes in, the window in which it fits; while another has gone even a step further and mounted his unit on wheels so it can be rolled from room to room as needed.

Industrial equipment makers, recognizing the demand for plant flexibility, are offering more and more "packaged" units and equipment of the demountable "erector-set" type. Caster-

consumer square off

mounted equipment is also becoming increasingly popular because of its mobility.

Many technical developments are contributing to these engineering and styling changes. Plastic laminates and vacuum-molded plastics, for example, are readily adaptable to squared design. In metals, new casting and forming techniques—shell molding, hot forming, impact extrusion—encourage design experimentation. Increased knowledge of mechanical and electrical principles is also bringing a new approach to product styling. Many products can now dispense with housings—either because new designs need less protection, or because new operating methods make them unnecessary.

One example is a recently-introduced Burgess utility lantern in which the battery itself—a new block-shaped unit, 4 by 5 inches—serves as the case. The spotlight unit is simply attached to the battery posts with two insulated screw caps.

A new broiler made by Electriglas Corporation provides another example of a technological change which makes it possible to eliminate the housing. Electriglas is using a glass panel heater in which a metallic ribbon embedded in the glass serves as the heating element. According to the company, the new heating system (using long-wave heat rays) does not require heat build-up as conventional broiling methods do. It is not necessary, therefore, to enclose the cooking area; the *Solarmatic* Glass Broiler has an open broiler rack and tray, with the flat heating plate mounted above them—easy to make, easy to use, and easy to keep clean.

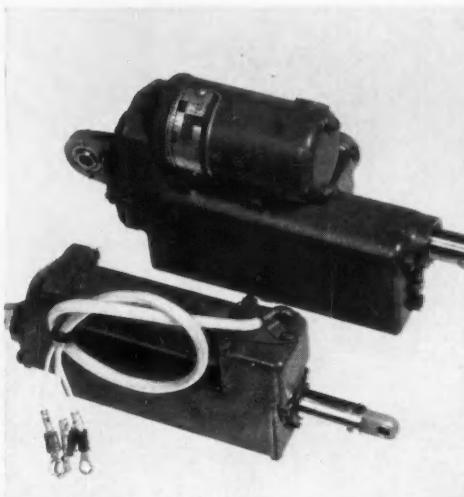
New materials are also making it easier to design disposable components.

Plastic containers, for instance, make it possible for General Electric to offer throw-away ink-wells for its newest strip-chart recorders. The new containers hold three times as much ink as the old ink wells, and can simply be discarded when empty instead of being refilled—something that was always a messy and time-consuming job.

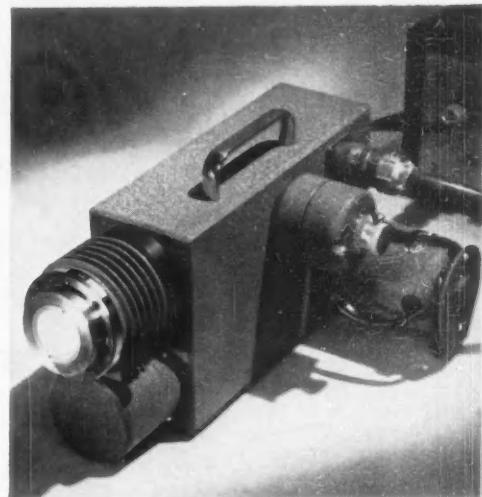
Changes like these, combined with the new styling trend, offer new ways to provide fresh sales points for many types of products.

One caution, though: There is a lot more to good styling—even when outlines are basically simple—than just fitting pieces together to form a slab or a cube. Indeed, as has often been said, it's a lot harder to achieve a product that is simple but effective than to deck one out with gimcracks and geegaws. The term "deceptively simple" still applies.

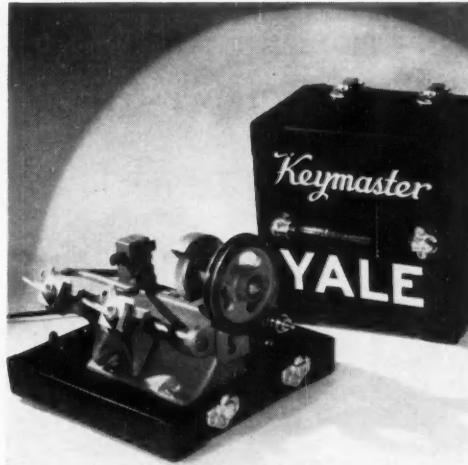
So, if your product needs a new sales push, try squaring it off. But be sure you get a good stylist and a good engineer to do the job.



New AiResearch actuator (foreground) saves space, achieves neater appearance, by sinking motor between posts. New unit weighs less, too.



Beckman & Whitley pressure recorder is simplicity itself. B & W makes no attempt to disguise basic shapes or add non-functional housings.



Yale Keymaster is new inside and out, features Oilite bushings, new cutter and guard. Design simplicity makes it durable, keeps costs down.



Kodaslide Projector features easy conversion from slides to filmstrips, smooth-surface design from its flat-sided feet to its squared-off top.



Toledo scale retains circular dial, but column and pedestal on this commercial model are straight and smooth. Gray hammertone finish is new, too.



Michigan tractor has new steel cab designed for easy field installation. Corners are rounded, but basic shape fits simplicity of tractor itself.

He spends more time doing things other than selling — Hobbies are a typical escape mechanism.



He develops inconsistencies in behavior...



He calls on only those customers with whom he has a good solid relationship...



Dealing with new accounts, he becomes more extravagant with his promises...



His tolerance for frustration will decrease.



His sense of isolation from the company will tend to increase.

FEWER SALES AT SIXTY

When a highly successful salesman slows down in his fifties, the reasons are hard to find. More often than you think, his age is a minor factor.

JAMES K. BLAKE
Marketing Editor

THERE ARE many reasons to believe that the psychological effects of oncoming retirement and advancing age are more marked with salesmen than with many other types of professions. The salesman who slows down before retirement age is reached is a problem most sales executives have faced. Yet, not many sales executives appear to have definite policies designed to improve the aging salesman's productivity during the final five or ten years of his career. And many sales executives, confronted with a falling sales curve on the part of a salesman who has been a good producer for years, administer the wrong medicine because

unwittingly they have made an incorrect diagnosis.

What actually happens to the salesman is described in psychological terms below. It is, the psychologists say, not the physical reaction to aging itself which does the damage, but rather anxiety associated with anticipation of aging and the changes which go with it that causes the trouble. The anxiety may begin when the salesman is 35 or 40. The mental reaction may simmer several levels down in the subconscious for a decade or more before it shows up in, among other things, inefficient selling. Though this type of response to aging is not restricted

to elderly salesmen (one psychologist noted that frequently a man of 40 or less appears at a hospital "with all the psychological symptoms which are associated with a negative reaction to the male version of the climacteric"), it is more likely to occur with salesmen than sales management. In any sales force, the more intelligent and emotionally mature men move out of the ranks into the managerial level. This increases the probability of a more severe reaction on the selling rather than the managerial level.

Why these reactions occur more frequently among salesmen than among, say, plant foremen or office managers is found in the psychological

A team of psychologists analyse the pre-retirement age problem salesman

Asked "What do you think happens psychologically to a salesman whose pace is slowing down because of age, when his management seems to be unaware of the underlying cause?", personnel of Science Research Associates of Chicago set down their "collective speculations." Cautioning that there is no empirical research on this specific problem, SRA terms these conclusions "theoretical best guesses of unknown reliability."

Since the stereotype of the salesman is that of the "lone wolf who walks and talks" and who "sells continuously" it is apparent that the physical and psychological concomitants of aging do indeed strike at functions which are critical for selling performance. Selling demands high energy and drive levels, strong motivation, flexibility and empathy, rapid tempo and endurance, pleasing appearance and persuasiveness, intelligence and emotional maturity. Each is possessed in varying degrees.

Salesmen are highly status conscious, in need of approval from others, somewhat more narcissistic than the average, manipulative of other people, sensitive to negative reactions from others and flexible enough to respond to these reactions.

The salesman has been called "other directed" in the sense that he lives out his conflicts and

motivations in direct relation to other people rather than through rigidly internalizing them. As the normal processes of aging overcome him, this process may begin to reverse itself, depending upon his level of emotional maturity, the strength of conflicts, his level of success in his job, or the amount of anxiety he experiences. Somatic symptoms may occur if the reactions to aging are strong, and especially if the conscious strivings for masculine independence is maintained, and acceptance of the normal deterioration of vigor is denied or rejected.

Flexibility will begin to diminish and while the need for approval will remain, empathetic ability and adaptability will diminish. Inconsistencies in behavior will appear which are probably the result of an attempt to appear adaptable. This will be adaptability by formula, in which the individual increasingly falls back upon rigid behavioral formulae for handling situations rather than modifying this behavior as the demands of the situation make it necessary.

The number of calls he makes will probably diminish both from sheer loss of energy and also from fear of losing sales even if calls are made. He is likely to become more service oriented and call on only those customers with whom he has a good solid relationship. To these he will give more service to keep them and to reassure

himself concerning their approval. When dealing with new accounts (or even old) he may become more extravagant with his promises and use poor judgment in an effort to sell.

As his sales effectiveness decreases he is likely to begin to spend more time doing things other than selling, more service, more public relations, more socializing, less selling. His tolerance for frustration will decrease and he may begin to rationalize his decreasing sales volume by blaming the company for failure to support him in his promises to the customers, or by complaining to the company about the product or the distribution methods. His sense of isolation from the company may tend to increase also, particularly if he's on the road.

His planning and reporting may become greater or less in frequency and bulk depending upon his own personality, but will probably diminish in quality. Needless to say, his relations with younger supervisors and salesmen will deteriorate to some extent. Since he is dependent upon the approval of others he will probably attempt to maintain as good relations with customers as is possible. It is characteristic of this situation that the customers will ordinarily express liking for the salesman, even enthusiasm, but upon objective consideration they'll admit that his selling ability has slipped.

make-up of the salesman himself. As the psychologists on the staff of Science Research Associates note, most salesmen are "other directed." This term from sociologist David Riesman's book *The Lonely Crowd* as applied to selling means that a typical sales personality does not generate his own motivations so much as he absorbs them from social and political currents about him. Though he may be forceful and aggressive, he is fundamentally dependent upon the opinion of others for his own sense of well-being. In other words, how others see him is extremely important to the sales personality. And the growing fear that others do not see him at 50 or 60 as he still regards himself, circa 40, looms correspondingly large in his mind.

The fear of failure becomes accentuated precisely at the time when the salesman is beginning to go downhill physically. Rationalizing, the salesman spends much more time with friendly accounts, much less time prospecting. He becomes hypersensitive to the word "no." Though it may easily be possible physically for him to cover his territory adequately, the district manager often attributes the veteran salesman's fewer new accounts, lower number of call-backs, and the like, simply to physical inability. If in this situation which is primarily psychological, the district manager makes what to him is a logical suggestion, namely that the salesman accept some help in his territory, what happens? To the salesman, this seems to confirm that his inner fear of growing inadequacy was based on fact and his performance slips a little more.

Very often the salesman who slips after 50 or 60 has a long record of successful accomplishment. The attributes that make an excellent salesman—a special kind of sensitivity, for instance, that immediately responds to subtle changes in a prospect's attitude—are precisely the attributes that create a selling slump during the "depression" years. A less impressive performer, a steady but unspectacular producer, is not equipped with the keen mental radar that usually marks an outstanding salesman. His wires, not drawn so taut, are not so likely to snap.

What are sales managements doing about this

situation? The answer seems to be that each sales V-P or sales manager uses the most humane methods at his disposal but that it is one of the most difficult problems they have to face. Often the means for getting at what may be the real core of the problem are just not available. As the sales vice-president of a medium-size Eastern manufacturing company put it, "We have to assume the man is affected by the physical results of advancing age. We don't have the time or money to go into mental therapeutics."

And, of course, many times when a good salesman slows down the only reason is that he is getting older. Psychological readjustments have little or nothing to do with it. There are, however, psychologists who believe a mental causative factor operates even when age itself is the primary reason. Charles S. Dewey of Charles S. Dewey and Associates, a Chicago firm of industrial psychologists, points out that "As the economy has expanded, many older salesmen have succeeded financially far above their fondest expectations in 1940. They are making good money and as they get older, their responsibilities to their families are decreasing. Furthermore, the company may have a very liberal pension plan which is not an unmixed blessing motivation-wise. Why work too hard?"

Other than man-to-man talks between the sales supervisor or district manager and the aging salesmen, relatively few companies tackle the problem at its psychological roots unless the salesman's behavior is such as to leave no doubt that he needs psychological readjustment—fast.

The most typical methods of management handling are these. One company makes its aging salesmen "supervisors," whenever possible. They assign one or more junior salesmen who help him by doing some of his legwork. While he is getting help, he is training his successor. Sometimes this works so well that the company allows the salesman to work past his retirement age to continue training younger men.

Another company sometimes splits the older man's territory, giving him the portion that requires the least physical effort and has accounts he can live with most effectively. Here

again, the older salesman breaks in his successor.

One firm shifts its districts from a geographic territory set-up to open territory where the man's prospects are lists of companies rather than acres of real estate. This gives him opportunity to produce within his capabilities rather than leaving a geographic area thinly covered.

Other concerns give the salesman those important, specialized accounts who prefer to deal with a highly experienced salesman in technical selling.

A basic problem in splitting territories is salary. A man on salary plus commission may end up with a territory that fits his restricted capabilities like a glove, but he may not be able psychologically or financially to adjust to the lower income which, more than anything else, suggests that he is on the road down.

Many companies, however, absorb the added cost of keeping the aging salesman close to his former income (even on straight salaried salesmen, there is the added cost of an additional man in the territory). Said the sales manager of a heavy equipment manufacturing company, "This practise increases our sales cost in any given territory, but we regard it as just one of those business expenses which is a necessary part of merchandising."

A considerable number of companies take the salesman out of active selling. In some instances the man is brought into the home or district office where his considerable experience is used for sales correspondence, sales analyses, job history data gathering, and sales training.

Relatively few companies have formal retirement plans which do not penalize the salesman for early retirement. The penalty for early retirement in most companies is considerable. In fact, these penalties often force a considerate sales manager to hold onto a salesman who is slumping and within five years of retiring. He knows that during the man's successful selling years with the company he has gradually built up a standard of living that would suddenly be cut out from under him. One company, however, has a plan which in this situation—between ages of 55 and 65—provides the salesman with the same amount annually that he would receive from the retirement plan at 65 plus the estimated amount of Social Security benefits they would receive at that age. They justify the increased expense by showing the increased profits from higher sales that effective replacements for these men produce.

Without this type of retirement plan and without psychological counseling or the opportunity to cut the job to fit the man, what happens? Says an executive V-P, "Where the man is unable to continue producing at the same high rate, it is sometimes difficult for him to realize he must adjust his scale of living. He hopes the situation is temporary. Quite often it falls upon the company to sit down and point out some of these facts of life." Echoes a steel sales V-P, "The problem can be lived with until retirement."



it pays to plan in plastics molded by GENERAL AMERICAN

plastic “picture frames” for outdoor signs?

HERE THEY ARE!
BEST OUTDOOR POSTERS
OF THE YEAR

23rd Annual Competition
of Outdoor Advertising Art

why not? they'll look better, last longer, cost less to maintain molded by General American

Do plastic “frames” suggest possible benefits to you for your product? Can you improve product appearance? Cut costs? Save on shipping weight? Consider the case of plastic frames for billboards . . .

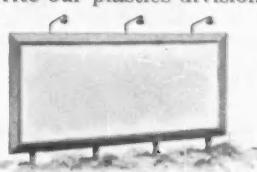
Billboards take a beating from summer sun and winter storms alike. Now, however, maintenance costs can be pared . . . with poster frames molded in plastics by General American.

These new frames will never warp, corrode or need painting . . . the color's molded in. They'll be resistant to salt air and “poster paste.” They'll weigh much less than other types and they'll be built to prevent pulling apart. If this application of molded plastics gives you an idea, why not investigate. Call or write our plastics division for further information.



**PLASTICS DIVISION
GENERAL AMERICAN TRANSPORTATION CORPORATION**

135 South La Salle Street • Chicago 90, Illinois



Plastic panel trim for 24-sheet posters is now available at the Butler Manufacturing Company, Kansas City, Missouri.

Facilities unmatched anywhere: injection, compression, extruding and vacuum forming, reinforced plastics, painting and assembling



*"We got
the facts we needed
from the Royal"*

American businessmen have found that the Royal Bank can help them with their Canadian affairs—can advise them on problems ranging from sales representation to choice of a factory site. For additional information, write to the Business Development Dept., at Head Office in Montreal.

Over 800 branches in Canada,
the West Indies, Central
and South America, New York,
London and Paris.

THE ROYAL BANK OF CANADA



HEAD OFFICE: MONTREAL
New York Agency—
68 William Street, New York 5, N.Y.
Canada's Largest Bank

DECENTRALIZATION

Continued from page 32

able vacant building was available and we were turning out burn dressings in less than five months.

Thankfully the atomic bomb scare, at least temporarily, became less critical. And we found soon after we got started that the Government was not going to order atomic bomb burn dressings on anything like the scale that had been predicted and on the basis of which the plant had been established.

After some months of temporizing, we took steps to reduce the staggering loss of the largely idle southwestern plant. Because of the obligation to be ready to go back into large-scale production of burn dressings, it was not possible to close down the plant. Therefore, we took steps to convert the plant to civilian production and warehousing for our southwestern customers.

However, that diversion of production from another plant, even in the area of so-called variable costs, left behind fixed charges to be absorbed. Thus the economic relief for the new plant was largely at the expense of an old plant. Characteristically, however, the management team adversely affected pitched in to resolve its problem for the good of the company as a whole.

That, briefly, is the story of two experiences in divergent situations which may, in their generalizations, serve others in evaluating the pros and cons of decentralization. But, in addition, there are some rather pertinent rules of thumb that may be considered.

Most essential, I believe, is the prerequisite that the right man be available for direction of each decentralized unit.

One pitfall to be avoided is the tendency to overman the decentralized unit. Unless tight control is exercised, one is apt to follow a traditional organizational pattern with a high fixed cost due to staffing out of proportion to actual needs.

To facilitate service operations such as accounting, personnel, purchasing, engineering, and the like, we use the simple device of temporarily assigning home office teams to install the necessary systems, and then turn over the functions to the

Continued on page 45

Simplify, Speed Up DRUM HANDLING



with
New

Portable "Weld-Bilt" Drum Elevator

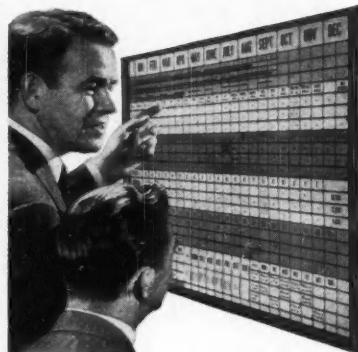
You can lift, transport, store and DUMP all sizes of drums faster, easier, with this new WELD-BILT Portable Drum Elevator. Unique worm-gear tilting mechanism makes "last-drop" dumping safer, more efficient, with minimum effort. Lift, electric-hydraulic operated, is also available for hand operation or fully electrified. Jack-up type steering permits easy, safe positioning.

*Write for prices on this important
time and labor-saver.*

WEST BEND EQUIPMENT CORP.
Materials Handling Engineers

303 Water Street • West Bend, Wisconsin

You Get Things Done With Boardmaster Visual Control



★ Gives Graphic Picture of Your Operations —
Spotlighted by Color

★ Facts at a glance — Saves Time, Saves
Money, Prevents Errors

★ Simple to operate — Type or Write on
Cards, Snap in Grooves

★ Ideal for Production, Traffic, Inventory,
Scheduling, Sales, Etc.

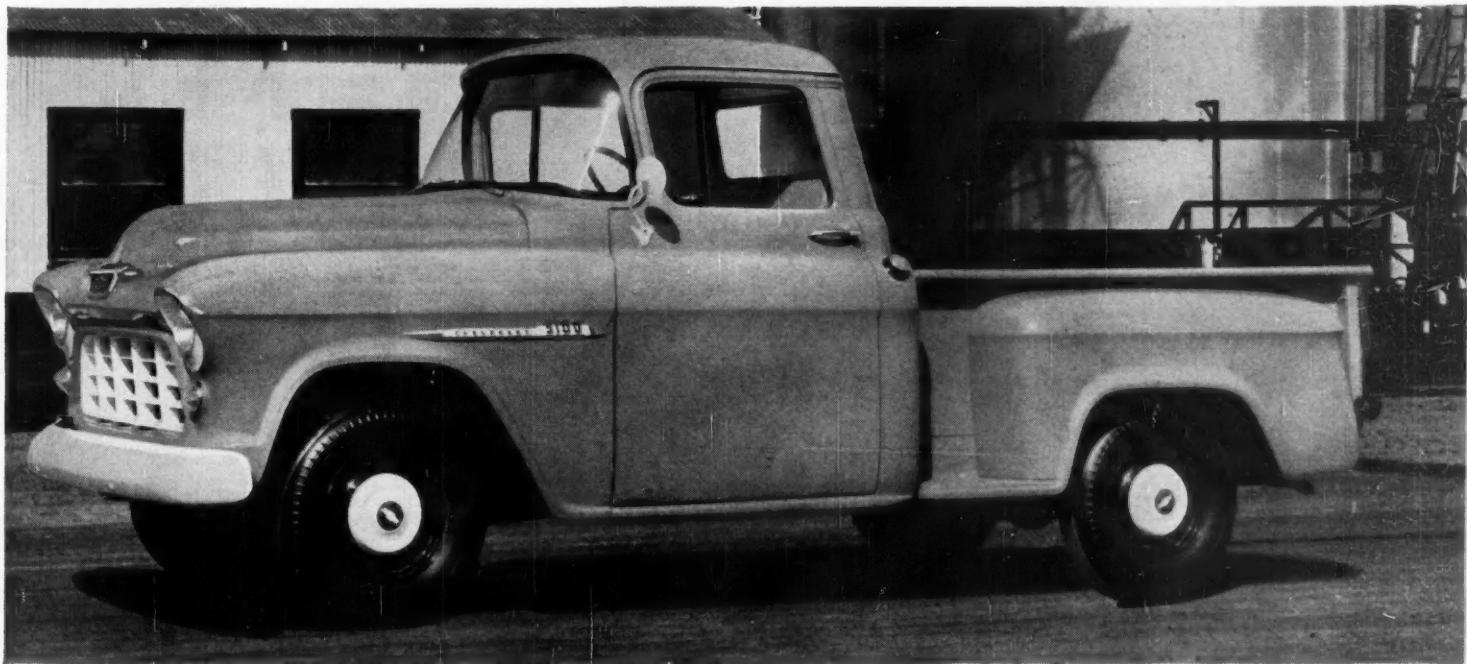
★ Made of Metal. Compact and Attractive.
Over 50,000 in use.

Complete price \$4950 including cards
FREE 24-PAGE BOOKLET NO. D-500
Without Obligation

Write for Your Copy Today

GRAPHIC SYSTEMS

55 West 42nd Street • New York 36, N.Y.



Bank on a **Task-Force** Truck to Cut the Cost of Moving Goods!

You'll save money on the job and be way ahead at trade-in time with a work-styled Chevrolet Pickup.

You save with modern high-compression power—In Chevrolet's new pickup truck, a new Thriftmaster engine is supplying the power punch—a big *valve-in-head* wallop, which means you get the most out of a gallon of gas. Fast acceleration shaves stop-and-go time and helps keep you on top of crowded schedules. And even in cold weather, you start more quickly with Chevrolet's double-punch 12-volt electrical system. That's a big advantage in itself—a husky reserve of electrical power when you need it!

You save with the most modern truck features your field has ever seen—New Work-Styling—so distinctively different that your Task-Force Truck is a profitable advertisement-on-wheels. New Overdrive or Truck Hydra-Matic, each an extra-big time and money saver, available at extra cost. New front and rear suspension systems, High-Level ventilation, outstanding cab comfort—there's everything to make driving less a chore. And you're bound to save money when drivers maintain peak efficiency!

Why buy an old-fashioned truck and stand to take a licking at trade-in time? See your Chevrolet dealer for the most modern trucks money can buy.... Chevrolet Division of General Motors, Detroit 2, Michigan.

NEW CHEVROLET
 ***Task-Force* TRUCKS**

7 Plants To Serve You 7 Ways



1 PRECISION HARDENED AND GROUND PARTS

2 POWDERED METAL PARTS

**3 SHEET METAL DIES
Produced in
IRON ALLITE, (Zinc Alloy)
AND PLASTIC**

4 EXPERIMENTAL, PROTOTYPE AND SHORT RUN PRODUCTION STAMPINGS

5 INTERCHANGEABLE PUNCHES AND DIES

6 STANDARD CAP SCREWS

**7 Special
COLD FORGED
Parts**

The full story of the facilities which produce parts like these is offered in Allied's "Plant 1" brochure. Write for your copy.

It's a matter of record that many parts previously considered impossible to produce as cold forgings are being manufactured by Allied. Exceptional engineering and production abilities are constantly in evidence here.

Perhaps you may have parts that may lend themselves to Allied's cold forging methods. If so, you can count on tolerances as close as those required for most machined parts . . . the extra strength and durability characteristic of cold forgings . . . and, of most importance, considerable cost savings when parts are produced in high volume. Why not look into the possibilities?



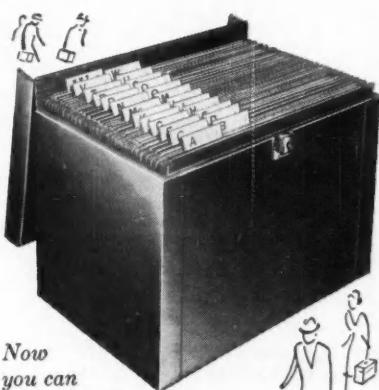
ALLIED PRODUCTS CORPORATION

DEPT. 28 • 12675 BURT ROAD • DETROIT 23, MICH.

in
FLORIDA
23
to serve YOU

Location	Name of Bank
BARTOW	FLORIDA NATIONAL BANK
BELLE GLADE	FLORIDA NATIONAL BANK
BUSHNELL	FLORIDA BANK
CHIPLEY	FLORIDA BANK
CORAL GABLES	FLORIDA NATIONAL BANK
DAYTONA BEACH	FLORIDA BANK & TRUST CO.
DELAND	FLORIDA BANK
FERNANDINA BEACH	FLORIDA NATIONAL BANK
FORT PIERCE	FLORIDA BANK
GAINESVILLE	FLORIDA NATIONAL BANK
JACKSONVILLE	FLORIDA NATIONAL BANK
KEY WEST	FLORIDA NATIONAL BANK
LAKELAND	FLORIDA NATIONAL BANK
MADISON	FLORIDA BANK
MIAMI	FLORIDA NATIONAL BANK AND TRUST COMPANY
OCALA	FLORIDA NATIONAL BANK
ORLANDO	FLORIDA NATIONAL BANK
PENSACOLA	FLORIDA NATIONAL BANK
PERRY	FLORIDA NATIONAL BANK
PORT ST. JOE	FLORIDA BANK
ST. PETERSBURG	FLORIDA NATIONAL BANK
STARKE	FLORIDA BANK
WEST PALM BEACH	FLORIDA NATIONAL BANK AND TRUST COMPANY

Total Capital Funds over \$33,000,000.00



Now
you can

TAKE IT WITH YOU —
Oxford
"Carry File" with
PENDAFLEX®
HANGING FOLDERS

EXECUTIVES: Your stylish "traveling office", for reports, letters, minutes.
SALES MEN: Carry price books, photos, testimonials, samples, other sales data.
HOME "MANAGERS": Perfect for household papers—bills, budget, taxes, insurance. Made of lightweight steel, tan finish. Brass lock, leather handle, piano-hinge. Holds 25 Pendaflex celluloid-tab hanging folders, which can't slump or sag. Clip for free catalog, name of dealer.

Oxford Filing Supply Co., Inc.
33 Clinton Road Garden City, N.Y.

local organization which is of predetermined size.

Among other items that are important is the need for uniformity in the area of quality control, accounting, and cost determination in plants producing similar products.

The danger of creating excess production capacity resulting in partial "shifts" at high costs represents an example of other innumerable factors to be considered.

Be Selective

Those of us who have employed decentralization extensively and who have maintained areas of centralization, recognize that there are times and occasions for each. Every case must be carefully evaluated with utmost consideration given to the managerial and the geographical aspects.

Decentralization, with its many and exceptional merits, should be viewed with eyes wide open. Well-conceived plans for decentralization and the availability of the required managerial talents are necessary to any hope of success.

Conversely, centralization is often the easy way out for the management without sights up, or the timid who fear to explore or fail to move in accordance with the facts before them.

Each situation must be approached with objectivity. As in all management problems, the sound fiber of business judgment is the keystone—a judgment which encompasses wisdom, sound planning, and courage.

We can never forget that in our American economic system we must provide our customers with ever-increasing product values or give way to competitors who successfully meet the challenge.

THE END



"You're supposed to be the office wit, Simmons—amuse me."

The right way to say

"Thanks for a job well done!"



Satin-finish table lighter



Two-tone chrome plate



High-polish chrome plate



Rich sterling silver



10-kt. gold-filled

ZIPPO

Always works—or we fix it free!

Zippo Manufacturing Company, Bradford, Pa.
In Canada: Zippo Manufacturing Co., Canada Ltd., Niagara Falls, Ont.

ZIPPO MANUFACTURING COMPANY, Dept. D-387, Bradford, Pa.

Please give me full information on the Zippo Recognition Program.

Name _____

Position _____ Firm _____

Address _____



Your company's insurance program today represents a substantial item of non-productive overhead. *How well-spent are the dollars you earmark for insurance coverage?*

Johnson & Higgins is continually helping many of America's leading corporations achieve sound, integrated, economical insurance plans. To see that you in modern industry get the best for your insurance dollar, we place at your disposal—

- experts in every field of insurance and employee benefit planning
- a staff of safety and fire protection engineers
- fully-equipped departments to assist in the adjustment and collection of claims
- insurance rate analysts to maintain continual supervision of your insurance costs.

It costs *no more* to get the *best* insurance brokerage service. A representative of J&H in your vicinity will be glad to call on you to discuss your insurance program—at no cost or obligation.

JOHNSON & HIGGINS

INSURANCE BROKERS—AVERAGE ADJUSTERS
EMPLOYEE BENEFIT PLAN CONSULTANTS

63 WALL STREET • NEW YORK 5

Chicago • San Francisco • Los Angeles • Detroit
Cleveland • Philadelphia • Pittsburgh
Buffalo • Seattle • Wilmington • Vancouver
Winnipeg • Montreal • Toronto • Havana • London

RISK MANAGEMENT

A Management Approach



DEVANEY PHOTOGRAPH

TO RISK PROBLEMS

I MANAGEMENT OUTLOOK..... 47

II BUILDING A SOUND PROGRAM..... 51

III CHECKS AND BALANCES..... 59

"WHETHER 'TIS NOBLER... TO SUFFER THE SLINGS AND ARROWS OF OUTRAGEOUS FORTUNE OR TO TAKE ARMS AGAINST A SEA OF TROUBLES AND BY OPPOSING END THEM," COULD ALSO BE APPLIED TO THE FUNCTIONS OF THE RISK MANAGER. THE PROPOSED ALTERNATIVES ARE ONES THAT BUSINESS MUST FACE, AND ON THE DECISIONS RESTS THE COMPANY'S FUTURE.

THREE were 2,854 businesses that failed with liabilities amounting to \$121 million during the first quarter of 1955. Such failures leave workers without a source of income; cut off owners from a source of profits; and deprive the nation of a source for goods.

Many of these businesses failed because they gambled unknowingly and lost. They gambled unknowingly because they either did not know what risks were involved or did not know how much protection they had afforded themselves against the known risks.

It would be difficult to estimate how many companies to-day are operating close to the brink of disaster as a result of this same kind of blind gamble. They may continue for years or they may totter and fall to-morrow.

Every venture that attracts the efforts of man contains some element of risk. The wise and successful business men are those who realize that such a risk exists; who have carefully calculated its potential against the possible rewards; and who have devised ways to reduce the risk to an acceptable level when it has been too high.

The most obvious, practical, and humane way to reduce risk is by prevention (see *Safety*, June 1955). When a risk cannot be eliminated or reduced, the alternative is insurance. Those who adopt neither of these precautions are gambling

against odds that can seldom be justified by the possible profits.

Among the most valuable dollars spent by companies are those that are paid for insurance. But management is often less aware of what it is getting, or what it should get, for these dollars than for almost any other money spent by the company.

Perhaps it is because most managements are primarily cost-conscious and they worry more about dollars than dimes. Insurance, viewed solely as a cost item, can easily be dismissed as inconsequential when compared with total sales volume, production costs, or the net worth of the company. Insurance is usually a low-cost item in the over-all budget and the value of the investment is not easily discernible until catastrophe strikes. While catastrophes do not occur very often, they always occur unexpectedly.

To determine the importance of insurance it should be viewed in terms of coverage rather than cost. It is not merely a matter of premiums. It is a matter of the total assets of the company and, possibly, of more than the total assets considering the liability potential that may be involved in some circumstances.

One risk manager with a large company was criticized some years ago for recommending an increase in public liability limits for the com-

pany beyond \$20,000. Fortunately he was successful in pushing through the recommendation and the company was carrying \$1 million when another concern had an accident that resulted in a train wreck. The company is now carrying \$2 million property damage liability insurance.

With an eye toward cost rather than coverage top management can easily fall into an attitude of "it can't happen to me." A wreck, an explosion, or a severe fire can quickly alter this attitude. However, a realistic approach to risk and risk management is a top level responsibility that should never be neglected.

When concentration is upon cost, there may be a tendency to measure the adequacy of an insurance program in terms of the amount spent for premiums. Premiums, of course, will be very high when the possibility of loss is unusually high. Instead of carrying such high-cost premiums, it might be far wiser to change the methods of operation, install safety equipment, or devise other ways to reduce the possibility of loss to a more acceptable level.

Occasionally a costly insurance program may appear to be justified because a high volume of claims are collected annually which seem to offset the expense. The term for this in the insurance fraternity is "swapping dollars" and the advantages of it to a company are limited almost

AUTOMATION at its Best

... uses

VICKERS
Hydraulics

This mammoth Cross Transfer-Matic uses Vickers Hydraulics exclusively to move cylinder blocks through 688 machining operations and inspections . . . for tool traverse and feed . . . to turn the blocks as needed . . . to clamp and unclamp, etc.

In addition to the advantages inherent in hydraulic control, Vickers Hydraulics gives you the benefits of a nation-wide and full-time field engineering and service organization to assure correct application and operation with least maintenance. Highly efficient Vickers Pumps reduce power costs.

The Vickers Application Engineer near you will be glad to show you the benefits you can obtain by using Vickers Hydraulics. Write for a copy of Bulletin 5002-A.

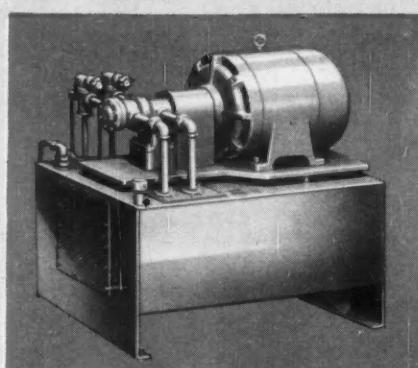
VICKERS Incorporated
DIVISION OF THE SPERRY CORPORATION
1424 OAKMAN BLVD. • DETROIT 32, MICH.

Application Engineering Offices: • ATLANTA • CHICAGO AREA (Brockfield)
• CINCINNATI • CLEVELAND • DETROIT • HOUSTON • LOS ANGELES AREA
(El Segundo) • MINNEAPOLIS • NEW YORK AREA (Summit, N. J.) • PHILADELPHIA AREA (Media) • PITTSBURGH AREA (Mt. Lebanon) • ROCHESTER • ROCKFORD • SAN FRANCISCO AREA (Berkeley) • SEATTLE • ST. LOUIS • TULSA
WASHINGTON • WORCESTER

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

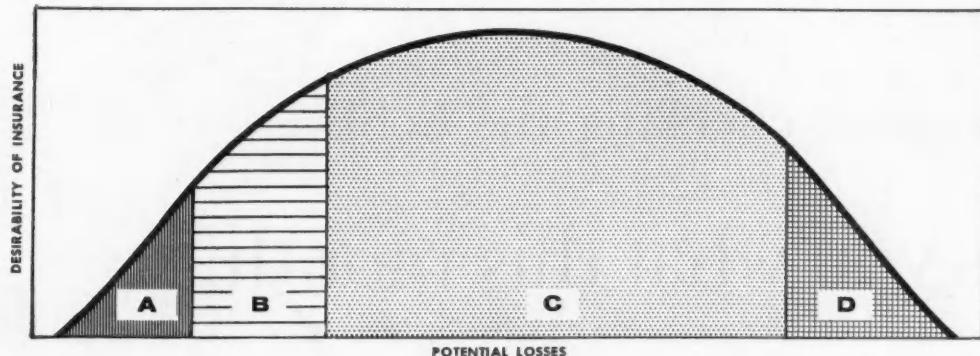


Cross Transfer-Matic performs 555 machining and 133 inspection operations on 100 V-8 cylinder blocks per hour with one operator. Shown here are three of five sections that operate automatically . . . individually or in any combination.



One of 60 Vickers Hydraulic Power Units used on this Cross Transfer-Matic. Some are standard units while others are custom-built by Vickers. Each is a complete "package" for an individual hydraulic circuit; it includes the necessary pumps, valves, oil reservoir, electric motor and controls, as well as all hydraulic accessories (oil filter, air cleaner, oil level gauge, etc.). The result is design simplification and savings in installation and maintenance costs.

7054



The schematic chart reflects the varying attitudes management may adopt toward insurable hazards. The "Desirability of Insurance" is affected by needs and cost. The "Potential Losses" depend upon frequency and possible loss per occurrence. The "A" area represents risks that are so remote and losses so limited that insurance is unnecessary. The "B" area involves greater aggregate losses and increased premiums. The "C" area is where loss is of more importance than cost, making insurance most desirable. In the "D" area, risk abatement is more desirable than the high-cost insurance available under such hazardous conditions.

entirely to any savings in paper work that might be involved. Such savings might, of course, be considerable or they may be negligible.

Under such circumstances a company may, in a sense, be considered as self-insured. It reduces simply to the fact that the company pays in premiums over a period of years exactly what the insurance concern pays in claims, plus an additional cost for handling or service.

The term "self-insurance" can be used appropriately in instances where the company is setting aside a fixed sum regularly to offset future losses. Some companies prefer to think they are self-insured when they are non-insured.

The primary difference is that self-insurance involves the maintenance of a fund reserved solely and expressly for offsetting losses, while non-insurance does not involve any such fund. With non-insurance losses are assumed as part of the cost of doing business and are paid as part of the operating expenses.

When a company becomes more cost-conscious than coverage-conscious in its insurance buying it may find itself playing both ends against the middle to get lower rates—a practise known as "rate hopping." Shopping around for the lowest premium may have some short-term advantages, but no sound insurance program can be built on a short-term advantage. It is long-term security that is sought and this can come only through continuity with an insurance company or a broker as long as the needs are served.

Generally it has been found that the desirability of insurance varies directly with the size and possibility of loss up to a certain point. If the possibility of a loss is remote and if the losses themselves are very small, the need for insurance is limited. As the frequency of occurrence rises or the magnitude of possible losses increases, insurance becomes more and more desirable.

However, it eventually reaches a point where the possibility of loss is so high (and insurance is so expensive) that risk abatement becomes a more desirable solution than insurance. After that point, the desirability of insurance declines as it becomes more and more advantageous to attack the mounting possibilities of loss directly through corrective measures or a complete change of operations.

A consideration of the nature of the risks and

the relative needs for insurance is a management responsibility that can be fixed at the policy-making level. Virtually every company carries some form of insurance, but surprisingly few have developed a stated policy toward the insurance function. There has not been a conscious effort to describe clearly those areas in which the company will assume the risk and the areas where the risk will be transferred to an outside agency.

In the absence of such a statement it is unlikely that a sound insurance program can be established and maintained. It is especially un-

likely in the many companies whose managements look upon the insurance function as an unwelcome step-child.

In such companies the insurance program is often handled as a part-time clerical job. Standard forms of coverage are continued on a renewal basis without regard to changing risks. Reports are often inadequate and seldom read by top management. And, indeed, top management has all too often either shifted its entire responsibility to an outside agency or turned it into a routine chore that has been delegated and forgotten.

In many companies there has not even been a planned effort to examine the areas of risk. Such an examination must be in the form of a continuing project because every business is undergoing constant change. The discovery of new risks and the recommendation of proper action to meet such risks are marks of a well-managed risk department.

The actions need not be limited just to the buying of insurance. For example, the American Broadcasting Company has a transmitter at the top of the Chicago Civic Opera House which, along with a number of studios, was served by a single cable through the building. The insurance manager discovered this and realized that a rather substantial revenue loss could occur if anything happened to that cable. Rather than consider business interruption insurance as the solution, he recommended that a spare cable be installed and this has now been done.

Many concerns may feel that they do not have the manpower or the knowledge to develop an adequate insurance program. They may feel that such an undertaking can be accomplished only by those who can afford a full-time insurance manager—or risk manager.

While such a person is desirable, he is not essential in many instances. Indeed, there are so few men qualified for such a responsible position that companies which can afford to have a full-time risk manager have been unable to fill the position.

There are many things that every company can do toward developing an insurance program. They are things that are as much the responsibility of top management as anything else that affects the total assets and income of the company.

WHY BUSINESSES FAIL

Classification of Causes

	First Quarter, 1955	
	APPARENT CAUSES	TOTAL PER CENT
NEGLECT.....	136	4.8
Bad Habits.....	28	1.0
Poor Health.....	77	2.7
Marital Difficulties.....	17	0.6
Other.....	14	0.5
FRAUD.....	63	2.2
Misleading Name.....	1	0.0
False Financial Statement.....	15	0.5
Premeditated Overbuy.....	4	0.2
Irregular Disposal of Asset.....	34	1.2
Other.....	9	0.3
INEXPERIENCE.....	2,589	90.7
Inadequate Sales.....	1,419	49.7
Heavy Operating Expenses.....	192	6.7
Receivables Difficulties.....	289	10.1
Inventory Difficulties.....	246	8.6
Excessive Fixed Assets.....	268	9.4
Poor Location.....	74	2.6
Competitive Weakness.....	589	20.6
Other.....	118	4.1
DISASTER.....	49	1.7
Fire.....	27	0.9
Flood.....	3	0.1
Burglary.....	4	0.2
Employees' Fraud.....	2	0.1
Strike.....	5	0.2
Other.....	8	0.2
REASON UNKNOWN.....	17	0.6

Because some failures are attributed to a combination of causes, the total of individual causes may exceed the total for the category.

Not all failures can be avoided by insurance, but there are many areas other than "Disaster" in which some form of insurance might help to avoid conditions that could lead to failure.

Quick! Without checking the books:
Who owes you what this month?



WITHOUT THE BOOKS in front of you, chances are you'd never remember who owes what, and never be able to collect the money needed to keep your business going from month to month.

Why take the risk, when Travelers Accounts Receivable insurance protects you fully against the loss you're bound to suffer if you're unable to bill customers because your records have been destroyed?

Ask your Travelers man to tell you, in detail, how this insurance reimburses you for amounts that are owed you—that you cannot bill. And ask him also to tell you about Travelers insurance for your legal papers, sales records and other vital documents.



YOUR ASSETS are too vital to entrust only to an accounts receivable ledger—which is so vulnerable! Fire, theft, flood or explosion could destroy the records and *your business*.

YOU WILL BE
WELL SERVED BY
**THE
TRAVELERS**



INSURANCE COMPANIES, HARTFORD 15, CONNECTICUT

*All forms of personal and business insurance
including Life • Accident • Group •
Automobile • Casualty • Fire*

RISK MANAGEMENT

II BUILDING A SOUND PROGRAM

MANY COMPANY presidents feel that their worry about insurance ends with the delegation of responsibility for a sound insurance program to an efficient subordinate. While management may delegate responsibility, assign duties, and transfer authority, it cannot escape its final accountability for the company's property, profits, and reputation.

It can be of small consolation to the top executive to shift responsibility to some subordinate after a catastrophe has struck. The final accountability after such occurrences as General Motors' Livonia fire or the Texas City explosion remains a burden of the executive. It is, indeed, far better to be safe than sorry, as the executives of the Scott Paper Company discovered when their Yankee Dryer was knocked out by a blown boiler and could not be replaced for nearly two years. The expenses that continued during that period along with the loss of earnings were covered by insurance.

Because of this, it is essential that the chief executive know what the insurance program should accomplish, establish procedures for reaching that objective, and check the results to be sure that an adequate job is being done.

This does not imply that every president should be an insurance expert. It does mean that he should know his company well enough to decide which risks should be insured and which should be borne by the company, and to recognize how well his decisions are being carried out.

A complete risk analysis of the company's operations is an essential step in developing a satisfactory insurance program. Little can be done about providing protection until there is a knowledge of the hazards that exist. The job, therefore, is to list the fundamental risks involved in all phases of the company's operations.

A capable and experienced risk manager working with other executives and department heads can usually analyze the risks of a business. Where a full-time risk manager is not available, one usually finds these functions assigned to one of the financial officers of the company. In either instance the help of outside experts should not be discounted in making a risk analysis and may often be essential. Such help may come not only from agents representing insurance companies, but also from brokers, insurance consultants, and professional appraisers.

Since the job is to seek out all possible hazards in all operations of the company, it is important that the executive responsible for insurance work closely with all departments. Often it has been found that a committee arrangement is most satisfactory in handling this and other phases of the insurance program.

To assure a complete and methodical analysis of the exposure to risk, it is often useful to proceed with an exposure chart that has been designed especially for the particular industry. Of course, almost any standardized form will have to be modified to meet the specific requirements of an individual business.

After the risks have been surveyed there should be a study of the fundamental risks to determine whether any can be eliminated or reduced and to evaluate the possible losses that could occur. Professional advice can be especially helpful here because of the serious consequences that may result from the poor judgment or lack of complete knowledge by an inexperienced man in the company.

It may be relatively easy to determine the direct loss involved in the complete destruction of a building or of equipment within a building. Such a loss, however, might be but a fraction of the total loss that could result from the lack of sales or production that ensued. Sometimes a very small initial loss can create a considerable loss of earnings.

For example, the burning out of a transformer might knock out an entire production line for an extended period. If the product were a seasonal or styled item, sales could be irretrievably lost and even the competitive position threatened. And yet the cost of the transformer might be negligible in comparison.

The problem of risk abatement enters here. If it is discovered that a transformer or any other unit represents a possible bottle-neck in the uninterrupted flow of operations, it might be advisable to install a standby unit to safeguard earnings rather than provide for additional insurance.

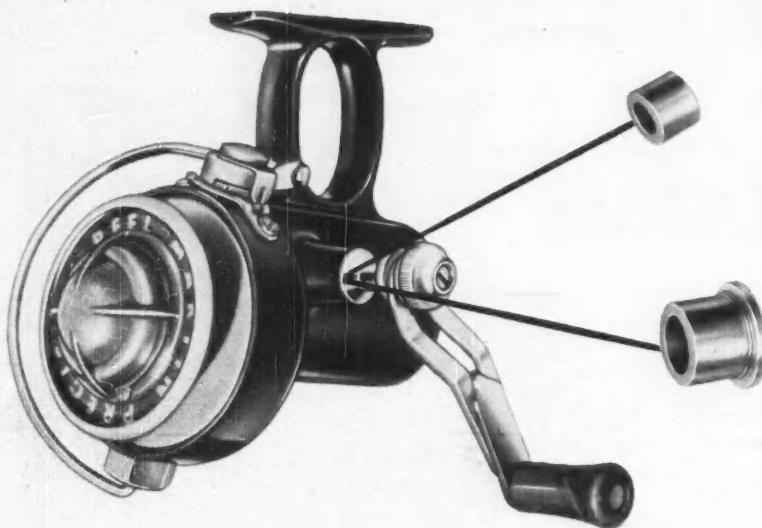
Having determined what the risks are, having reduced them wherever possible, and having established the possible losses that could be incurred, management is in a position to set up a policy toward insurance. Such a policy will evolve from top level discussions concerning the kinds of risks that will be insured, the extent

ARE YOU SURE YOU DON'T NEED INSURANCE



UNITED PRESS PHOTOGRAPHS

ONLY CHRYSLER MAKES OILITE®



one-half million spins under tension and OILITE bearings show no appreciable wear

Here's a fishing reel that is subjected to laboratory tests far more drastic than it receives from anglers—and the self-lubricating OILITE bearings take it in stride. Here's what the spinning reel manufacturer reports: "Last summer we had one stock reel tested under tension (up to and including four pounds) at varying speeds. This reel had your bearings, of course.

"Our original intention was to give the reel a break-down test. However, after running the reel under tension 186,727 revolutions of the crank handle, actually revolving the head over half a million times, we found that the bearings showed no appreciable wear. In fact, your bearings appeared only slightly worn in. This is a terrific recommendation, in our opinion, for your bearings."

The impregnated oil in self-lubricating OILITE bearings is held in storage by capillary attraction and provides a surface film for positive, constant lubrication. OILITE bearings are particularly successful in trouble areas where it is difficult or impossible to provide lubrication. The built-in oil cushion absorbs heavy shocks and stresses.

Chrysler engineered OILITE bearings are made of various metals and alloys in a wide range of sizes for a multitude of uses. Standard bearings and bearing material (cored, bar and plate stock) are available from local dealers throughout the U.S. and Canada.

Contact Amplex for help with your bearing problems. The engineering facilities of Chrysler-Amplex are available to serve you. OILITE Field Engineers, Supply Depots and Dealers in all principal cities. Overseas distribution through Chrysler Export.

Chrysler-Amplex also manufactures Permanent Metal Filters, Finished Machine Parts and Friction Units.

IT'S NEW! IT'S FREE!

First complete information on self-lubricating bearings, finished machine parts, filters and other powder metal units. 52 pages. Write today for OILITE Engineering Manual E-55.



In Powder Metallurgy...it's Amplex

CHRYSLER CORPORATION
AMPLEX DIVISION

Dept. W-7

Detroit 31, Michigan

to which they will be insured, and how they will be insured.

The statement of policy may vary in length depending upon how detailed or how general it is intended to be. In any event, it should be clear and should represent the basic thinking of management toward its insurance problems. The degree of detail in the statement generally will reflect the extent to which management wishes to delegate decision-making to the insurance executive.

Different companies face different problems and the policy must be tailored to fit the peculiar needs of those it serves. As the problems and needs change, the policy must be altered to fit circumstances.

To assure its being up-to-date, the policy should be a matter of interest to all segments of the business and should be considered in all changes that affect the operations of the company. This is a communications problem and, as such, points up a weakness inherent in companies in which the insurance functions are conducted by a man whose primary occupation holds him to a desk or office. The risk manager can do a far more efficient job by having free and frequent access to

all parts of the business and by holding a key position.

The development of the insurance program itself will follow from the management policy as it has been set forth. With the policy as a guide, the program should be developed on the basis of protection rather than cost. The fundamental objective should be to see that the company never sustains an uninsured loss of such magnitude that it is knocked out of business. Beyond this it should protect the company's assets, its funds, and its earnings against significant losses.

Another way to express this is, "We buy insurance to replace the uncertainty of a loss we cannot afford with the certainty of a premium payment we can afford."

There is the implication in this that there will be uninsured losses and no program should attempt to cover all possible losses. However, the uninsured losses should be small enough individually and in the aggregate so as not to threaten seriously financial stability.

While it is of inestimable help to have the services of an outside expert in the other steps toward developing an insurance program, it

Continued on page 56

MARSH & MCLENNAN

INCORPORATED

Insurance Brokers

CONSULTING ACTUARIES

AVERAGE ADJUSTERS

Chicago New York San Francisco Minneapolis Detroit Boston Los Angeles

Toronto Pittsburgh Seattle Vancouver St. Louis Indianapolis Montreal

St. Paul Duluth Portland Buffalo Atlanta Calgary Washington

Tulsa New Orleans Phoenix Milwaukee Cleveland Havana London



Puts your business on a cash basis

If you are a manufacturer or a wholesaler with annual or potential sales of \$1,000,000 or more you can profitably use our kind of banking service to provide increased working capital without increased indebtedness or dilution of profits.

Why not investigate this modern approach to your money problems and learn how you can put your business on an all-cash basis, with wider opportunities for sales and profits.

More than four hundred companies in various industries are now profitably using our banking services.



Textile Banking Co., Inc.

*Providing operational financing for manufacturers and distributors
of furniture, apparel, electronics, plastics and textiles.*

55 Madison Avenue, New York 10, N. Y.

You can do what Professional Insurance Buyers do...get BROADER SIMPLIFIED INSURANCE

Professional Insurance Buyers are employed by many corporations to develop the program of insurance that best fits their need for protection. These buyers, through agents and brokers, find the answer to their requirements in the policies pioneered by North America Companies.

Your business may not be large enough to warrant an Insurance Buyer on the staff. But, like the professional buyer, you can get policies that are broad, simplified and fitted together to form a wall of protection—at the most economical cost.

Indemnity Insurance Company of North America is the leading independent market for casualty insurance, the company Professional Buyers consider the place to get unusual protection to cover unusual risks.

On these pages are six coverages which you should consider when you discuss your insurance needs with an Indemnity Insurance Company of North America Agent or with your own Broker.

NORTH AMERICA COMPANIES



Insurance Company of North America
Indemnity Insurance Company of North America
Philadelphia Fire & Marine Insurance Company

PROTECT WHAT YOU HAVE®

Philadelphia 1, Pa.

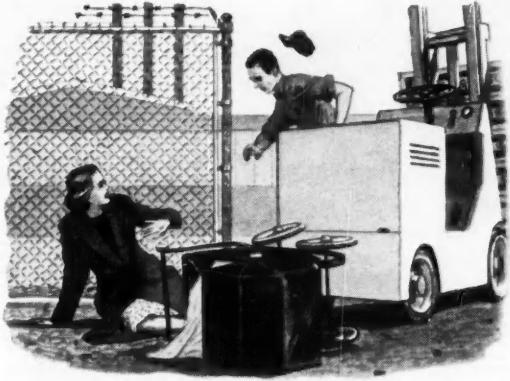


1. D.D.D. Policy (Dishonesty, Disappearance, Destruction). Indemnity Insurance Company of North America pioneered in the development of this package policy for business men. It not only covers all losses arising from embezzlement by employees, but also provides comprehensive protection against loss of money and securities from most forms of crime.



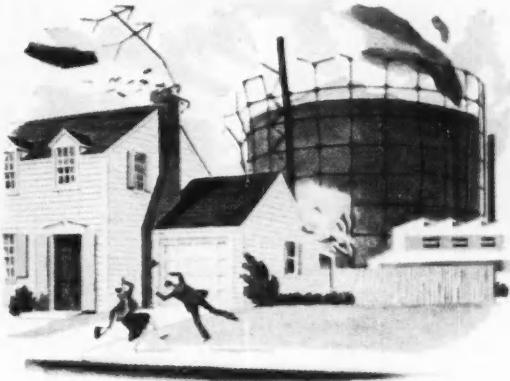
4. Key Man Group Accident and Sickness Insurance. A unique accident and sickness program for your team of key men employees. Especially designed for your company, it gives your employees the security of an insured salary continuation plan during disability. Also provides high limits and benefits to fit your needs.

that fits your business needs at low cost



2. Blanket Liability Policy* tailored to cover all of the exposures and hazards of third-party liability that face your business. The policy has broad insuring agreements and is rated on a simple unit base that eliminates costly record keeping for insurance purposes only, and is low in cost. It provides protection against unexpected loss from unforeseen mishaps.

*Not available in New York, Louisiana or Texas



3. Excess Liability Insurance. Prudent management of a business enterprise calls for protection against catastrophe loss through excess general liability, automobile liability and workmen's compensation insurance. Indemnity Insurance Company of North America has long specialized in excess covers and has become the largest domestic market for catastrophe insurance.



5. Blanket Travel Accident Policy. Covers all employees while they are traveling on company business. Provides world-wide accident protection twenty-four hours a day. Includes rail wrecks, air crashes, hotel fires and other accidents occurring while traveling. This coverage is increasingly important to business concerns.



6. Liability Insurance on Your Fleets of Automobiles. Can be tailor-made to fit your needs with broad coverage backed by expert loss prevention and fast claims service. Indemnity Insurance Company of North America provides high limits of liability to meet today's conditions. A sound safeguard for businesses.

American Credit Insurance AND *The Case of the Timely Advice*

THIS is an illustration of the manner in which American Credit can often help initiate action for the benefit of its policyholders. Whatever the size or the nature of a business, situations like the one outlined here can arise.

In the present case, the policyholder had previously obtained an increase in the credit limit on a single customer, up to a coverage of 150 thousand dollars, with a ten percent deductible. Some time later, the policyholder's Credit Department contacted us through routine channels about a proposed extension of time on the account. The total outstanding at that time amounted to slightly more than 120 thousand dollars.

Before deciding what should be done, we suggested that an investigation be undertaken through one of our own branch offices. With the facts in the case fully established, the policyholder agreed with us that an extension was actually inadvisable, and authorized us to proceed with efforts to collect the amount past due. No payments were forthcoming, and in the meantime, other creditors had come forward. Preparations were made for immediate suit.

As a result of our activities and the activities of other creditors, the debtor made an effort to find a purchaser for his stock, in order to ward off complete disaster. Such a purchaser was eventually found, and negotiations were begun for settlement of the claim. In the meanwhile, we paid our policyholder slightly over 100 thousand dollars, thus forestalling any possible curtailment of operations due to shortage of fluid capital.

Eventually, with the concurrence of our policyholder, a settlement was made with the purchaser of the stock for payment of the greater part of the original debtor's account. Thus, through the timely advice of American Credit, a happy ending was written to a story that might otherwise have terminated in misfortune.

Whether you are doing business with a few large accounts or a great many small ones, you too will find new assurance in the knowledge that your accounts receivable are protected by insurance to at least the same extent as your buildings, your machines, and your shipments. For your copy of a new booklet: "Credit Insurance, Its History and Functions," write Department 50, First National Bank Building, Baltimore 2, Maryland.

American Credit Indemnity Company of New York

is practically essential that such help be used in the actual buying of insurance where a knowledge of insurance markets, contracts, and costs becomes paramount.

However, management should not relinquish its entire responsibility in these matters to an outsider. It is not to be expected that an outsider can get as close to the problems of a company as an executive within the company can get. The full-time risk manager, or his equivalent, can uncover problems and provide answers to the problems as they fit company policy.

Unfortunately, it is not easy to secure the services of a qualified risk manager even by those companies well able to afford a full-time man. The nature of the position requires a combination of training and background that cannot usually be obtained by formal education alone. Management itself may be partly to blame for this by making the insurance manager's job look like a dead-end position.

On-the-job training appears to be one solution provided the trainee can be found with an interest in insurance. The advantage to the company would be especially great because a person trained to handle the insurance problems of a company can usually handle many of the other major company functions.

No matter how sound an insurance program may be, it cannot remain sound without periodic reviews and almost constant modifications. It is not only important that full reports be submitted to management, but that they be read and considered by management.

To prepare a full report it is usually necessary to have the insurance function centralized. This remark may be superfluous, but it is not uncommon to find insurance activities being carried out as a small part of a number of divisions or departments.

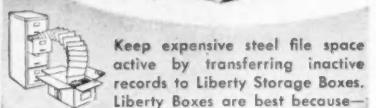
To get management to read the report it is often found helpful to prepare it as a one-page summary of the over-all program backed up by detailed statements and figures.

To get management to act, it is necessary that the top executive become aware of the full importance of his insurance program. Such an awareness will come when insurance is viewed in terms of its true value. And its true value is measured not by costs, but by coverage.

For Easiest, Most Economical Systematic RECORD STORAGE

Liberty
REG. U.S. PAT. OFF.

BOXES

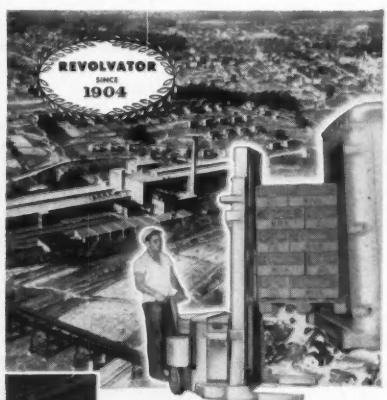


Keep expensive steel file space active by transferring inactive records to Liberty Storage Boxes. Liberty Boxes are best because—

- Highest quality materials throughout
- Systematic labeling makes locating any record easy
- Records are protected against dust and spilling
- 25 Standard Stock Sizes . . . special sizes made to order
- Patented Closure is easy-to-use, keeps records clean
- Take years and years of rough usage

Sold by all leading stationers
Send today for FREE Catalog picturing and describing economical record storage products for every business.

BANKERS BOX COMPANY
720 S. Dearborn Street • Chicago 5, Illinois



YOU BENEFIT...

By Over 50 Years of Diversified experience.

Revolator Go-Getter Lift Trucks have been used to solve a great range of materials handling problems. Quiet, smooth, powerful operation; easy maneuverability; the freedom from heavy maintenance; overall simplicity of construction of these Revolator Go-Getters have made the name Revolator synonymous with peak efficiency in materials handling.

Today write for full information.

REVOLATOR CO.

8702 Tennele Ave., No. Bergen, N. J.



High Lift Go-
Getter — a real
brute for work.

Choice of the Leaders

CUTLER-HAMMER

MOTOR CONTROL

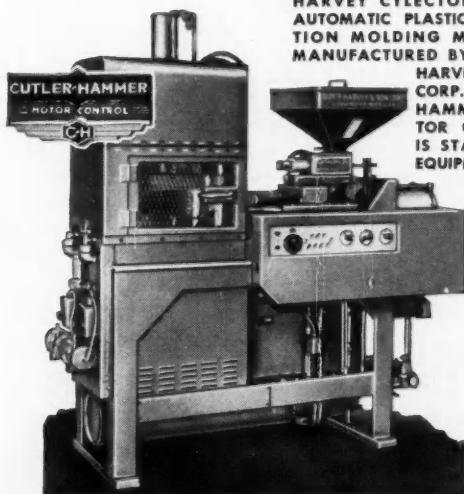


The Mark of
Better Machines



DoALL BANDSAWING MACHINES WITH AUTOMATIC POWER CUT-OFF MADE BY THE DOALL COMPANY. CUTLER-HAMMER MOTOR CONTROL FURNISHED AS STANDARD ORIGINAL EQUIPMENT.

BARNESDRIL HONING MACHINE MADE BY THE BARNES DRILL CO. CUTLER-HAMMER ELECTRONIC MOTOR CONTROL FURNISHED AS STANDARD ORIGINAL EQUIPMENT.



HARVEY CYLECTOR FULLY AUTOMATIC PLASTICS INJECTION MOLDING MACHINE MANUFACTURED BY GUY P. HARVEY & SON CORP. CUTLER-HAMMER MOTOR CONTROL IS STANDARD EQUIPMENT.



MACHINE TO STRAIGHTEN AND CUT OFF TUBING FROM COILED STOCK. MADE BY WALTER P. HILL, INC. CUTLER-HAMMER MOTOR CONTROL FURNISHED AS STANDARD ORIGINAL EQUIPMENT.

It is not surprising

Improvement in manufactured articles usually comes about through companies competing for market favor, one "leapfrogging" another. But not always. There are always a few companies that don't wait for competition to bring out something better. They leapfrog themselves and as a result their hold on the market remains unbroken, their leadership unchallenged. It is notable that such consistent leaders in the field of machine design and manufacture just as consistently use Cutler-Hammer Motor Control on the machines they

build. It is notable—but not surprising. For as wide awake as these companies are, it would be the supreme inconsistency for them to go to sleep on the very component that safeguards the performance they so carefully build into their machines. They provide against any risk by turning to the *known* dependability and *unchallenged* leadership of Cutler-Hammer Motor Control in its own field. And so should you. CUTLER-HAMMER, Inc., 1436 St. Paul Avenue, Milwaukee 1, Wisconsin. Associate: Canadian Cutler-Hammer, Ltd., Toronto, Ont.

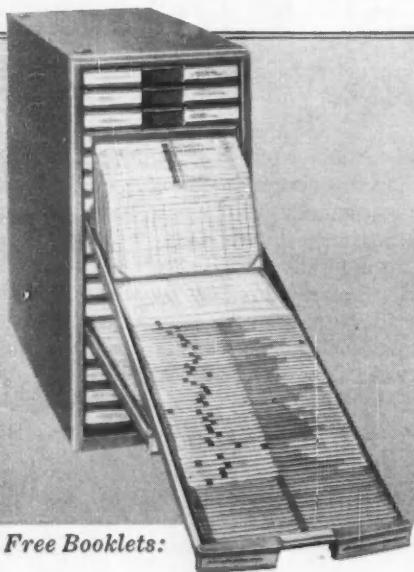
Remington Rand

DIVISION OF SPERRY RAND CORPORATION

Mr. Executive: *(Are you concerned with control?)* { *Production?*
 Personnel?
 Sales?
 Inventory?

You, too, can profit through the finer yet firmer executive control Kardex Visible gives. Kardex integrates and concentrates related facts for quick reference—it signals major items of information in convenient, bar-chart form. You can see...compare...analyze...execute...all in seconds.

Why not apply Kardex Visible Control to your record-keeping problems, whether those listed above or others specific to your business? For any of its cost-saving applications, Kardex provides quick, effective Visible Control, "locked-in" with exclusive Kardlok Forms and Signals. Write Remington Rand, 315 Fourth Avenue, New York 10, New York.



Free Booklets:

Production—X1268; Personnel—CR906; Sales—KD524; Inventory—KD375



RISK MANAGEMENT

III CHECKS AND BALANCES

Checking points for a balanced insurance program include those that are generally considered to be essential, but are sometimes overlooked or neglected.

Does the company have a written statement of policy on insurance?

Not many companies do, and yet it is needed for guidance in developing and maintaining a sound program.

Is management's policy toward insurance publicized throughout the company?

Because of the importance in having a free flow of information, it is helpful to have as many as possible within the company understand what the insurance program is designed to do.

Is the insurance function centralized?

Inefficiency and high costs may result from dividing the insurance operations among a large number of departments.

Is the responsibility for insurance centered in an executive position?

Because insurance touches all operations, it should be the responsibility of a man close to the top management level.

BUSINESS INTERRUPTION



"So now they go out for tea!"

Is there an insurance committee in the company?

This device has been especially helpful in companies where the complexity of operations or the size of the plant makes it difficult for one man to keep up with all changes.

If a full-time insurance manager cannot be justified, has consideration been given to combining this job with safety or some other related activity?

The term "risk manager" implies a broader responsibility than "insurance manager" and might well include other duties.

Are reports submitted periodically to top management?

No insurance program should be continued indefinitely without at least an annual review. Considering the effects of inflation, new materials, products, packaging, procedures, and the other changes that are constantly taking place, top management should be constantly alert to reports and recommendations from the insurance department.

On the basis of reports, does top management reconsider both the program and the policy?

Under constantly changing conditions that all companies experience, neither the insurance program nor the company policy should be static.

Is the company more concerned with insurance costs than with business coverage?

While costs are important, it is usually more important to consider what the company can afford to lose than what it can afford to spend.

Is insurance purchased on a "social" rather than a "business" basis?

When premiums are looked upon as favors to be granted on the basis of friendship, the insurance program often suffers.

Has the non-insurance of risks been determined by design or by oversight?

Sometimes it can be of greater importance to know what has not been insured and why it has not been insured than to be fully acquainted with the risks that are covered by insurance.

Does the program of self-insurance operate on a sound basis?

A sound basis usually consists of adequate experience plus a funded reserve. When doubt exists concerning the feasibility of self-insurance, it is often wiser to turn to an outside carrier.

Has the company met all its legal obligations for insurance?

Workmen's compensation is required in most states, and many states have legal requirements concerning automobile liability insurance. Government and private contracts may call for some kinds of insurance as well as union contracts.

CASUALTY



"Look! You're fired! No bands!"

LOOK
TO
LEHIGH

For
*High Efficiency
Warehousing and
Distribution*

In storing and moving goods to market, keen sighted men choose the Lehigh way. Lehigh offers not only the latest warehousing and fast delivery services, but new concepts of aid to marketers.

Our 35 years of specialized experience are at your disposal for solving warehousing service problems in a manner that meets your particular needs. Leading manufacturers have found Lehigh services more efficient and less costly than operating their own warehouse and delivery fleets.

Our five modern warehouses and spot delivery fleets in the New York area put you in the world's richest market and seaport. In the booming south, commercial and industrial leaders benefit by the convenient Lehigh space, facilities and services in both Richmond and Atlanta. Our huge Horseheads center in upstate New York is an ideal location for multi-market distribution, processing — even manufacturing. Our unique tank farm at Bayonne, N. J., unloads bulk liquids, stores and repacks for low cost distribution. Be far-sighted. LOOK at the Lehigh story. Write, phone or wire.

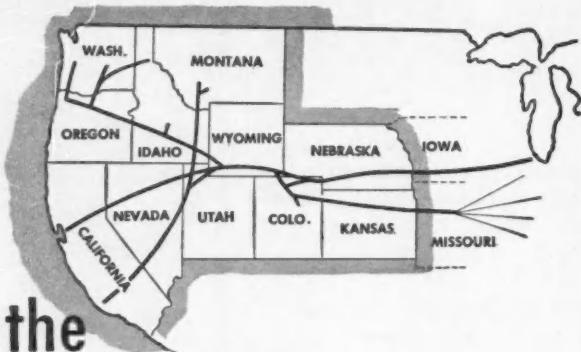
LEHIGH
*Warehouse &
Transportation Co.*

102 Frelinghuysen Ave.
Newark 5, N. J.



Telephones:
(N. J.) Bigelow 3-7200
(N. Y.) REctor 2-3338

for information about favorable **INDUSTRIAL SITES**



in the
UNION PACIFIC WEST

get in touch
with your nearest
"U.P." representative
or write ... or
wire



**Industrial
Development
Dept.**

OMAHA 2, NEBR.

In the eleven-state territory which it serves, Union Pacific provides the finest in rail service. In many cases, industrial trackage can be built where requested.

UNION PACIFIC RAILROAD

Are outside services used in planning and placing insurance?

Such services include brokers and consultants. Brokers are buyers of insurance whose ability to analyze risks, knowledge of the markets, and buying power contribute to a sound program. Consultants are specialists in risk analysis and insurance who recommend but do not buy insurance for a company.

Has consideration been given to the possible loss of earnings as well as loss of assets?

Insurance designed to protect the normal earnings is known as *Business Interruption, Use and Occupancy, Consequential Fire Loss, and Prospective Earnings*.

What areas of insurable risks have been overlooked?

Many kinds of checklists are available which include such types as fire, water, smoke, liability, theft, and accounts receivable. Such lists can be very helpful, but they do not always provide the answers to all the problems a company may face. These problems involve not only kinds of insurance carried, but also extent of coverage.

It would be impossible to list all the many kinds of insurance that are available. Such a list would probably have to be under constant revision because new developments (such as atomic energy) are always creating new risks.

There can be no substitute for expert advice in securing adequate coverage in an economical way. The position of risk manager has responsibilities which management cannot well afford to overlook.

OWNER'S LIABILITY



"That's George. He's no apple polisher!"

Property Accounting Affects Profit

- Earning statements are substantially influenced by the accounting treatment of capital and expense items and by depreciation policies. Continuous American Appraisal Service provides the tool for better control of property and depreciation accounting.

The AMERICAN APPRAISAL Company



Over Fifty Years of Service
OFFICES IN PRINCIPAL CITIES

No. 1 in 50,000 Firms

*Because It Outlasts
Ordinary Brushes*

3 to 1



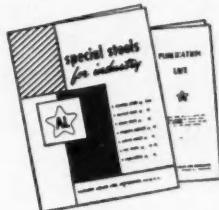
Speed Sweep
The brush with
the steel back

27 Speed Sweep styles and sizes to meet every sweeping need. Write for prices today.

MILWAUKEE DUSTLESS BRUSH CO.
530 N. 22nd St., Milwaukee 3, Wis.



FIRST COST can be the LEAST COST if it's the LAST COST



WRITE TODAY

For These Publications

1. SPECIAL STEELS FOR INDUSTRY . . . 16 pages of essential data on the proper selection and application of principal AL special alloy products: stainless, tool and electrical steels and sintered carbides.

2. PUBLICATION LIST . . . a complete listing of all AL publications, both technical and non-technical (over 100 in all), with a handy order form for your convenience.

ADDRESS DEPT. DR-67

First cost is never the whole story. Length of service and cost of upkeep are equally powerful factors in determining the lifetime cost . . . the *real* cost of an object.

Nor does it have to be something glamorous. Even such everyday things as kitchen garbage containers and work surfaces, mixing bowls and flour sifters, etc., are transformed when they're made of Allegheny Metal. They look better, clean easier, last many times longer. That's because *no other metal* is at once as hard and strong, as

resistant to wear and corrosion, as stainless steel. Even where the use of Allegheny Metal results in higher first cost (and quite often it doesn't!) it is sure to cost far less in the long run.

Does that give you ideas about adding new sales appeal to your product? Or reducing maintenance, repair and depreciation costs in your equipment? If so, our engineers are ready to help you work them out. *Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.*

Make it BETTER-and LONGER LASTING-with

Allegheny Metal

Warehouse stocks carried by all Ryerson steel plants



GOING PLACES is always easier
with Cities Service..



Helpful directions to travelers on major turnpikes is just one small reason why the green-and-white emblem renews its welcome daily.

CITIES  SERVICE
A Growth Company

Number 10 of a series

NEW METHODS
AND MATERIALS

Metal coats, plastic sandwiches, give products a new look

Build-ups that lengthen product life

Metal overlays used to salvage worn parts are not new. But they're becoming increasingly valuable as equipment costs go up; and as better methods and materials are introduced.

One new hard facing technique, Flame Plating, for instance, developed by Linde Air Products Division of Union Carbide and Carbon (see December 1953, page 127), is helping to prolong die life as much as 500 per cent. And, Linde says, Flame Plated dies result in better quality formed parts as well. The abrasion resistance of Flame Plated forming dies is so much greater than that of unplated dies that parts come out smooth even after long use.

Among the newer build-up materials are chromium and nickel-manganese alloy wires for application through standard semi-automatic welders (photograph below), a Crack-Free Chromium coating (page 64), a low-cost, low-hydrogen iron-chrome-molybdenum-silicon alloy, and pure molybdenum sprayed coatings.

The low-hydrogen alloy, developed by Wall Colmonoy Corporation, Detroit 3, Mich., is specifically designed to provide "a low-cost, general purpose hard-facing material having . . . high impact and abrasion resistance . . . and superior welding characteristics."

The molybdenum coatings are for applications requiring exceptional stamina. Metalizing Engineering Company, Westbury, N.Y., which supplies them, says, for example, that molybdenum-coated pump rods in tough oil-industry service last more than twice as long as those coated with stainless steel, and more than thirty times as long as uncoated hardened steel rods.

Styrene shows its strength

With little fanfare, but a lot of determination, high-impact polystyrene plastics are moving into a good many consumer and industrial products. Far less brittle than the standard polystyrene molding material, the high impact type is mod-

erate in cost, has good electrical properties, can be supplied in a variety of colors, and is easy to form. It does not, however, have the optical clarity that is usually associated with polystyrene.

High-impact styrenes (generally, rubber-modified materials) are made in several types and grades—some of them having impact strengths almost 20 times as great as that of general-purpose resins, and the ability to retain their toughness at temperatures well below zero.

Among the parts now being made of these materials are pipe fittings, lawn mower wheels, refrigerator compartment panels, radio, camera, instrument, and air conditioner housings, toys, and household items ranging from serving bowls and knife sharpeners to carpet sweepers.

At least four major plastic producers now supply high-impact styrenes, and new, improved types are appearing almost daily.

Sandwiches that add strength, cut waste

Sandwich materials—lightweight cores faced by metal, plastic, or plywood sheets—got their first big foothold in the aircraft industry. But they're finding plenty of other uses now—in trucks, boats, refrigeration equipment, and many other products.

Bakelite, for instance, has a new foamed material—tiny, hollow phenolic spheres, bonded together with polyester, phenolic, or epoxy resins. Sandwich core structures made with this "syntactic foam" material, says H. K. Phinney of Bakelite, can save as much as 50 per cent in cost as compared to solid panels of some laminated plastics. It can be made in densities ranging from 10 to 40 pounds a cubic foot; and, when faced with plastic sheeting, will provide tensile strengths up to 3,000 pounds a square inch, and compressive strengths of 12,000 pounds.

A good many types of sandwich materials are now being tested, among them panels made with foamed silicone and isocyanate cores (see November 1953, page 54), honeycombed glass-fiber reinforced plastic laminates, and honeycombed and corrugated metal sheeting.

Armco Steel Corporation reports that a cellular stainless steel mat—stainless sheeting two or three thousandths of an inch thick, honeycombed, and faced with stainless panels—is being evaluated for use in jet aircraft for service at temperatures as high as 900° Fahrenheit. Armco says they can be used for tail pipe shrouding, bulkheads, fins, and after-burner cases.

A similar sandwich material, made of aluminum, is being used by Boeing in its "707" jet tanker-transport prototypes for wing flaps, ailerons, and trailing edges.

Also under test are foamed metals for high-temperature and other special uses. They're made by incorporating a foaming agent into the molten metal—much like the expanded plastics.

Many of these sandwiches are, of course, quite expensive. But there is every reason to expect



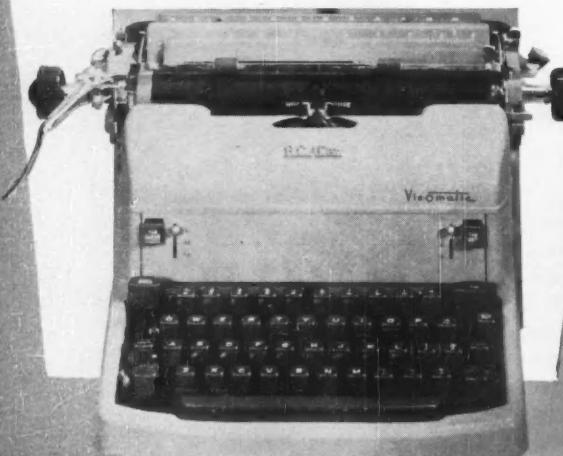
Hard coatings can be applied in many ways. This semi-automatic welder is adapted for new Stoddard tubular wire alloy that can be deposited without flux at rates up to 15 pounds an hour.

It's so much
better!



R.C. Allen Visomatic

- **BEAUTIFUL, DISTINCTIVE LETTERS . . .**
"letter perfect" correspondence that commands attention, compels action.
- **VISIBLE AND AUTOMATIC MARGINS . . .**
the easiest, fastest margin setting of all.
- **BALANCED LINE SPACING . . .**
saves miles of "reach" in returning carriage and spacing up.
- **TYPIST PREFERRED TOUCH . . .**
the key tension and snappy response preferred by most typists.
- **LOW, LOW COST . . .**
you'd expect to pay much more for a typewriter with so many exclusive features, but it actually costs less.



Call your dealer for a free demonstration or write for colorful brochure.

R.C. Allen Business Machines, Inc.
686 Front Avenue, Grand Rapids 4, Michigan

that the lower-cost panels will find an increasing number of jobs both in and outside of the transportation field.

New chrome plate needs no undercoat

A durable, low-porosity coating that can, if desired, be deposited directly on the base metal without a copper or nickel flash—is United Chromium's newest development. It should prove useful for corrosion prevention and decoration as well as for building up worn parts.

According to UC, the new electro-deposit can be applied with standard equipment (using a special solution and a prescribed plating technique), is comparable in cost to conventional chrome plating, provides good protection against corrosion, and adheres well to the base metal, whether or not an undercoating is used.

When applied directly to the base metal the new plate has a dull finish. It is quite easy to buff, though, because the surface is somewhat softer than conventional chrome plate.

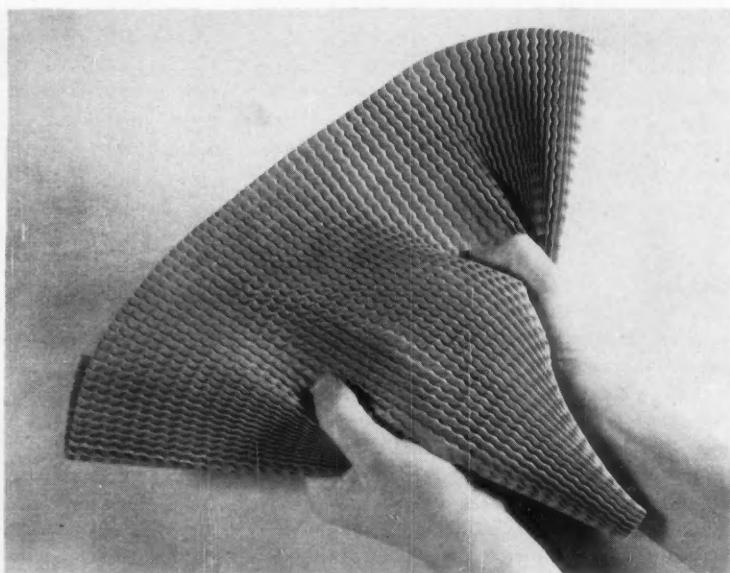
The softer surface of *Crack-Free*

Chromium also provides greater toughness and impact resistance, and, says UC, makes this coating particularly suitable for dies and other working parts.

The first large-scale use of Crack-Free chrome plating is at Maytag Corporation, where the coating is being applied to more than a dozen different washing machine parts—shafts, pivots, tubing, and the like. In this installation, automatic plating is used, and the coating is deposited at the rate of approximately one mil an hour. Current density is about 3 amperes per square inch and the bath temperature is 150° fahrenheit. Maytag is using a coating about three tenths of a mil thick, deposited directly on steel and copper base metals. The coating can also be applied directly to zinc die castings and stainless steel.

How big is the atom market?

Three hundred million dollars will be spent in the next four years just for non-government atomic research, Atomic Industrial Forum predicts. It recently completed a survey of more than 400 manufac-



It stretches to fit

Flexible, formable, and virtually crush-proof, this new cushioning material can be formed into sleeves that will fit over odd-shaped parts like porcelain insulators, cushion blocks and bottles, used as a liner for containers, or as an interleaving material. Made by Sherman Paper Products Corp., Newton Upper Falls 64, Mass., it's called *Carbon* biondulated cushioning, is produced by

an Italian high-temperature, high-pressure process from cellulose fibers. Several grades are made—rigid, flexible, tight and loose—with varying degrees of stretch. According to Sherman, use of *Carbon* for product cushioning has made it possible to reduce wrapping thickness in several cases to a point where more than twice as many items can be packed in a standard container.

L-O-F Glass Fibers Company

unites two strong manufacturers

...benefits customers 4 ways

On March 1, two progressive producers of quality glass fiber products united their five plants, their extensive research facilities and their sales-service forces.

The merger—of first-rate importance to every company using glass fiber products—brings into one strong progressive-minded organization:

- the combined **Fiber-Glass** and **Corrulux Divisions** of the Libbey-Owens-Ford Glass Company, and...
- Glass Fibers Inc.** They now become...
- L-O-F Glass Fibers Company.**

To all users of glass fiber products, this alert and co-operative new organization assures these immediate benefits:

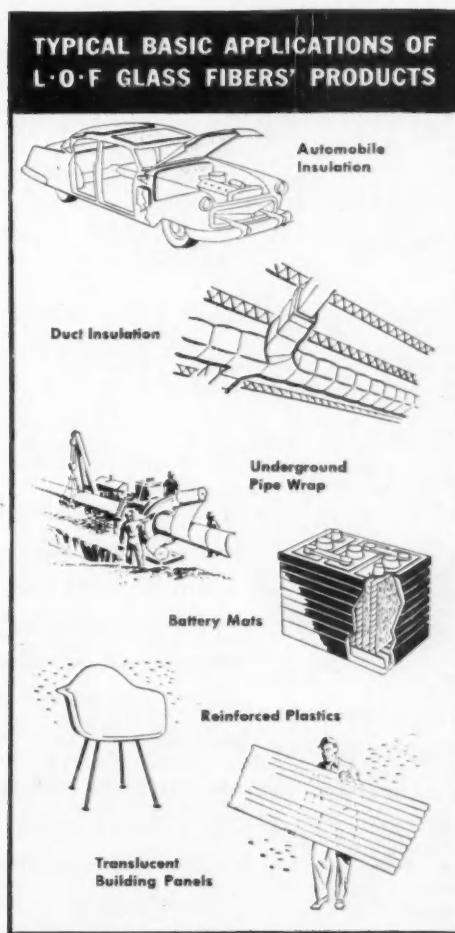
- 1.** *Unsurpassed quality in glass fibers:* Longer, finer, more uniform glass fibers result from the company's exclusive "Electronic-Extrusion" process. These longer, finer fibers assure more efficient insulation; more uniform yarns; stronger reinforcement.
- 2.** *A widely diversified line of improved glass fiber products:* Thermal and acoustical insulation; textile yarns; underground pipe wraps; Q-felt high-temperature insulation; plastic reinforcement and translucent building panels.
- 3.** *Five plants, strategically located for dependable delivery to meet inventory and production demands of all users.*
- 4.** *National coverage by a force of carefully selected distributors assures conscientious service in all local areas. These independent businessmen can handle your requirements for glass fiber products; advise you on applications.*

For additional information, contact your nearest L-O-F Glass Fibers office, or write: L-O-F Glass Fibers Company, Dept. 77-75, 1810 Madison Avenue, Toledo 1, Ohio.



L-O-F GLASS FIBERS COMPANY TOLEDO 1, OHIO

Makers of longer, finer glass fibers by the exclusive "Electronic-Extrusion" process.



L-O-F GLASS FIBERS' PRODUCTS INCLUDE:

Super-Fine and Microlite Thermal and Acoustical Insulation • Microlite Acoustical Baffles • Microlite Hull Board • L-O-F Glass Fibers' and Vitrex Textile Yarns • L-O-F Garanized and Chrome Roving, Even-Tension Roving, Chopped Strand • Quartz Micro-Fibers • Microflex and Super-Fine High-Density Compressed Board • Industrial Mat • Blue Flag Underground Pipe Wrap, Duramat Pipeline Outer Wrap, Duramesh Pipeline Fabric, Duratape Pipe and Joint Wrap • Corrulux Translucent Structural Panels



If your business is tieing-up operating funds in receivables that could be converted into cash, it will pay you to investigate Heller Commercial Financing Plans.

Through Walter E. Heller and Company, your business can receive cash for receivables currently outstanding plus immediate cash at time of shipment for subsequent billings. You can ship and bill more by eliminating a major investment in these assets.

The practical advantages of Heller funds and financing methods are obvious: 1) one fixed tax deductible charge based 2) on the cash you actually use for the time you use it, whether days, weeks or months; 3) no

note maturities to meet or compensating balances to maintain; 4) no participation in ownership, management or profits; and 5) a continuously revolving fund of cash that increases or decreases to exactly match your current operations without the need for negotiation or renewal.

Heller funds and financial plans are best utilized by companies which can use from \$50,000 to several million or whose sales volumes are in excess of \$500,000 per year. Today Walter E. Heller and Company advances more than \$600,000,000 annually to industry.

Send today for a free copy of "Operating Dollars" which illustrates the scope of Heller operations with actual case histories.

ACCOUNTS RECEIVABLE FINANCING
FACTORING • REDISCOUNTING
INSTALLMENT FINANCING
MACHINERY AND EQUIPMENT FUNDING
INVENTORY LOANS



Walter E. Heller & Co.

Dept. DR

Bankers Building, 105 W. Adams St. • Chicago 90,
Illinois

New York Office: 10 East 40th Street • New York 16

turers, electric power companies and private research organizations that shows the biggest market for nuclear power plant components in the next few years will probably be military propulsion units. But, by 1965, the survey indicates, the industrial market should be a sizeable one, with annual expenditures for reactor construction alone running at more than \$500 million—and perhaps as high as \$1,500 million.

Copies of the report, which also projects specific equipment needs (pumps, heat exchangers, control instruments, and so on), are obtainable from AIF, 260 Madison Avenue, New York 16, N.Y. (For additional information on tapping the atom market, see *Fitting your product to the atomic age*, January, page 36, and February, page 39.)

New products from the sea

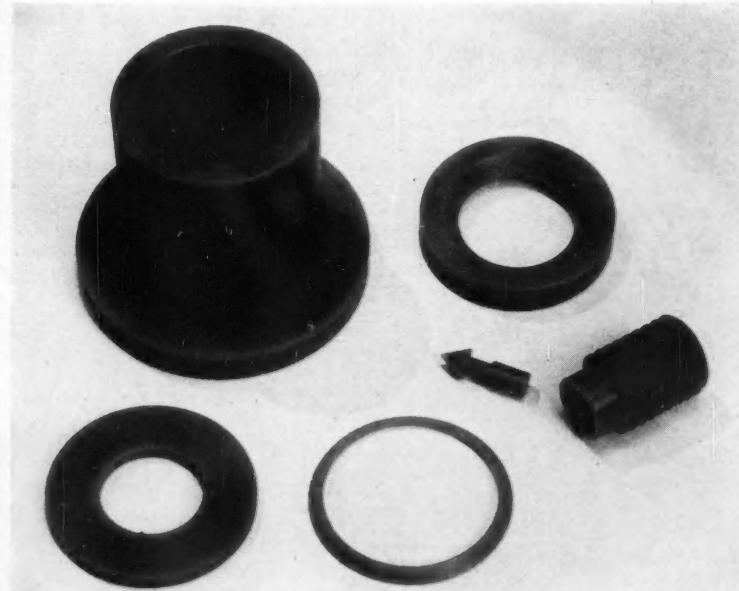
Look to the sea, if you're looking for a new product, or a materials source. Already a primary source of one major metal—magnesium—the sea is now being recognized as an important storehouse of many other materials.

Seaweed, for instance, supplies such useful compounds as the alginates which can serve as gelling, emulsifying, film-forming, and stabilizing agents for food products (ice cream, puddings, salad dressings), drugs, cosmetics and paints.

Alginates are also used as binders and plasticizers for ceramics and extruded metal powder products, welding rod coatings, cements, and adhesives. Colloidal solutions can be formulated with a wide range of viscosities and solids contents.

One of the newest alginate products is an edible sausage casing developed by Visking Corp., Terre Haute, Ind. Known as the *Tasti-Jax*, the new casing is said to have the advantage of oil resistance and an ability to shrink with the sausage as it is cooked, plus ease of processing, reasonable cost, and satisfactory shelf life.

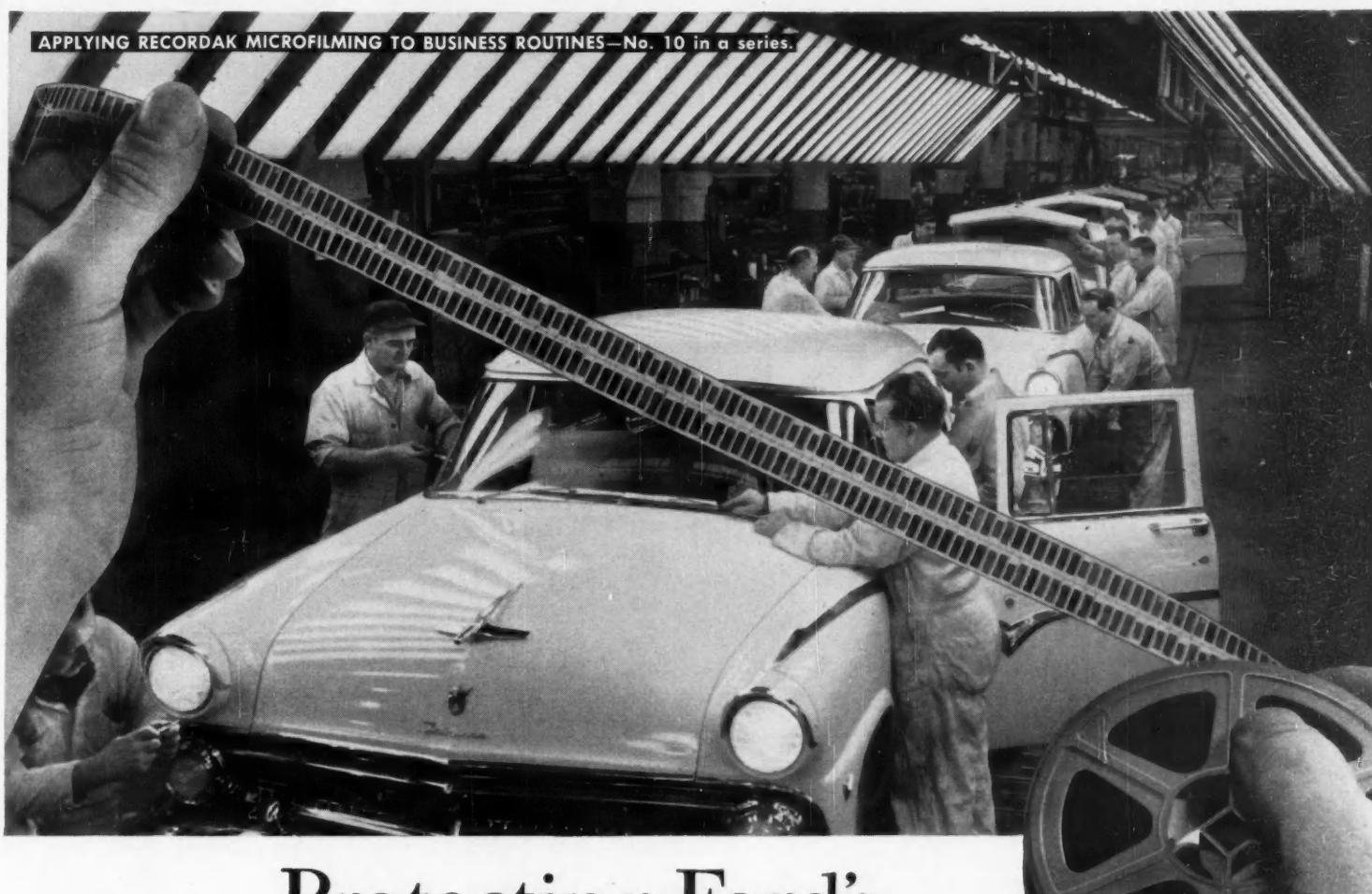
A good many other developments of this kind can be expected in the next few years as alginate suppliers intensify their market development work and major research programs like the million dollar one sponsored by Rockefeller Foundation at Scripps Institution of Oceanography get under way.



Strong new contender

Setting its sights on the tough jobs now held by the fluorine plastics, this new chlorinated polymer makes some pretty big claims. According to its producer, Polymer Corporation of Pennsylvania, Reading, Pa., *Polypenco K-51* "combines excellent mechanical strength, high temperature resistance, exceptional chemical resistance, good dimensional stability, and machinability." Said to

be a chlorinated polymer that is a good deal less expensive than the fluorine plastics, and comparable to nylon (see May, page 42) in heat resistance, K-51 is now being supplied in rods up to two inches in diameter for fabricating such parts as pump impellers, gaskets, valve seats and other process equipment parts. Larger rods and other shapes will be available soon.



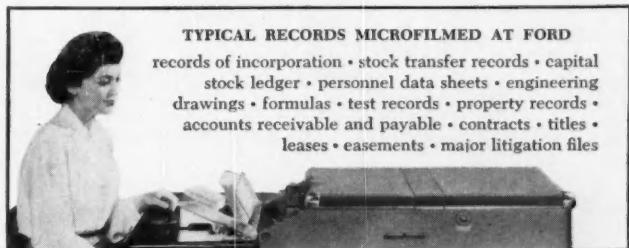
Protecting Ford's 1½ billion dollar business

**The Ford Motor Company photographs
its vital records on Recordak Microfilm . . .
gets valuable extra protection at low cost**

Insurance against loss of property and sales is not enough.
Not enough when the life of a business is at stake.

If Ford's vital records were lost, reconstruction would be a hopeless task. But Ford insures against this possibility—however slim—by microfilming its valuable documents and storing the Recordak Microfilm copies at remote locations.

Microfilming is best for the job for the following reasons—
1. Quickest, easiest way to duplicate records of all types and sizes



TYPICAL RECORDS MICROFILMED AT FORD

records of incorporation • stock transfer records • capital stock ledger • personnel data sheets • engineering drawings • formulas • test records • property records • accounts receivable and payable • contracts • titles • leases • easements • major litigation files

in large volume. For example, 200 letter-size documents can be copied in 1 minute with a Recordak Triplex Microfilmer, one of the Recordak models used by Ford.

2. Lowest Cost. As many as 29,000 check-size records fit on a 100-ft. roll of Recordak 16mm. Microfilm which costs only \$3.65, including processing charges.

3. No deterioration. Recordak Microfilms are processed to meet the high specifications of U. S. Bureau of Standards for archival films; will remain picture-perfect over the years.

4. 99% space savings. Ford stores over 18 million Recordak film copies in 20 x 30-ft. area. Not only does this save on filing equipment, but it also makes all records easily accessible.

Protection is only one of the benefits which Recordak Microfilming is bringing to over 100 different types of business . . . thousands of concerns. Write for free booklet, "Protection of Vital Corporate Records," and full details on Recordak Microfilming. Recordak Corporation (Subsidiary of Eastman Kodak Company), 444 Madison Ave., New York 22, N. Y. "Recordak" is a trade-mark

RECORDAK

(Subsidiary of Eastman Kodak Company)

**originator of modern microfilming—
and its application to business systems**

when design engineers demand
"THE RIGHT SPEED"
THE RIGHT POWER"

Janette

is the
No. 1 choice

Specialization in the design and manufacture of power drives for almost half a century has established the name JANETTE as one of the nation's top leaders in the science of speed reduction.

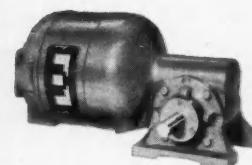
Any output speed, down to one revolution in 21 days can be had from JANETTE'S 119 basic models and 5,000 gear ratios.

But when the problem demands original research and custom design JANETTE engineers draw on a wealth of experience including many thousands of applications in daily use. That is your assurance of The Right Speed—The Right Power.

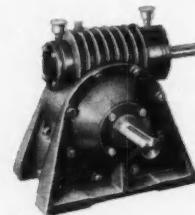
GEAR MOTORS SPEED REDUCERS



Gear Motors—Fractional Series



Gear Motors—Integral Series



Speed Reducers—Fractional and Integral Series



Electronic Variable Speed Drives

GROWING WITH INDUSTRY SINCE 1910

Janette

Electric Mfg. Co.

MORTON GROVE, ILLINOIS

Executive BOOKSHELF

Full Report

CAUSES OF INDUSTRIAL PEACE UNDER COLLECTIVE BARGAINING, Edited by Clinton S. Golden and Virginia D. Parker. Harper & Brothers, 49 East 33rd Street, New York 16, N.Y., 369 pages, \$4.75.

Proceeding from the premise that an ounce of prevention is worth a pound of cure, the authors have sought the significant signs of healthy, harmonious relations between management and labor. Too often research is undertaken after specific problems have festered.

Written under the auspices of the National Planning Association, this volume contains thirteen case studies by experts from business, labor, education, and the professions. Described in detail are the procedures used for co-operative co-existence in a number of companies including Crown Zellerbach, Libbey-Owens-Ford, Hickey-Freeman, Lockheed Aircraft, Atlantic Steel and others. Among the many conclusions from this stimulating study: full acceptance of collective bargaining and of unionism is an asset to management.

Never Again?

THE GREAT CRASH, 1929 by John Kenneth Galbraith. Houghton Mifflin Company, 2 Park Street, Boston 7, Mass., 212 pages, \$3.

Is the stock market merely a thermometer of economic health or is it a source of weakness or strength which can send the economy tumbling as in 1929? Can we ever again fall into such an economic abyss? These are among the many topics treated by one of the nation's leading economists.

His conclusion is that the decline in the economy was evident several months before the calamitous Black Thursday, but that the stock market crash reverberated through the economy because there were several imbalances and inequities which apparently no longer exist. While no reputable economist will state unequivocally that a depression is beyond the pale of possibility, the author makes clear

that an inventory recession—which the 1929-1933 debacle began—could not again deepen disastrously for the same reasons as it did a generation ago.

Not written for the professional economist but rather for the general reader, this lively, absorbing volume manages to impart a good working knowledge of economics. As Dr. Galbraith recounts the events which led to the crash, he points to the storm signals which repeatedly appeared but which were ignored by business men, economists, and small investors dedicated to the building of a new era of never-ending prosperity.

Significant Summaries

MANAGEMENT PLANNING AND CONTROL: AN ANNOTATED BIBLIOGRAPHY, Edited by Herbert F. Klingman. Controllership Foundation, 1 East 42nd Street, New York 17, N.Y., 176 pages, \$6.50.

The two essential management functions of planning and control have been the subjects of hundreds of books and articles in recent years. These publications have been summarized skilfully and placed between the covers of this new bibliography.

Among the topics treated are methods of organization, establishing goals, planning and forecasting, budgeting, and appraising performance. Many of the articles describe the experience of particular companies in these vital management areas.

Money At Work

HOW TO INVEST YOUR MONEY, by Ralph C. Epstein. The Ronald Press, 15 East 26th Street, New York 10, N.Y., 215 pages, \$3.50.

Would you like to be able to make a mountain of money out of a molehill of cash? If so, then this is not the book for you. But if you would like to put your excess funds to work vigorously but safely, then you will find this volume as valuable as a growth stock.

Authored by an economist who

HOW A NOTED TRAILER COMPANY CUT INVENTORY REPORT PREPARATION TIME 50%



The problem of Fruehauf Trailer Company branches was to determine quickly, by model, the location of used trailers in each of 71 branches so that requests for models unavailable in one branch could be filled from another.

To solve the problem, inventory information is typed by each branch on forms pre-printed on Colitho Offset Duplicating Paper Plates and sent to the home office, where all plates are duplicated. The 71 parts are collated and bound into books—one for each branch.

Not only are long hours of copying and proof-reading of in-

dividual reports saved, but also all chances of transcription errors are eliminated. Uniform, original-looking copies—in perfect registration and in any amount desired—are obtained at a saving in production time of 50%.

This case history demonstrates the economy and efficiency that countless businesses now enjoy through the use of Colitho Plates. We have a collection of these factual stories which you will find packed with valuable ideas. Just use the coupon and you'll receive your copy of the Colitho Idea File promptly.

 Colitho <small>THE "ONE-WRITE" WAY TO RUN A BUSINESS</small>	 
Colitho Division, COLUMBIA RIBBON AND CARBON MFG. CO., Inc. 857 Herb Hill Road, Glen Cove, N.Y.	
<i>Okay, rush the Colitho Idea File.</i>	
Name: _____	
Company: _____	
Address: _____	
City: _____ Zone: _____ State: _____	

See practical automation right now!

An exposition that *does* something about AUTOMATION. In one place, at one time, see the practical things—mechanisms, instruments, controls, handling devices, data processors, hydraulic, electric, mechanical and pneumatic components, etc.—that you can apply right now to make your production and processing more automatic.

This show has been designed for the production function in industry, leveled at the men who must re-engineer production and processing lines immediately in order to cope with rising costs and hot competition.

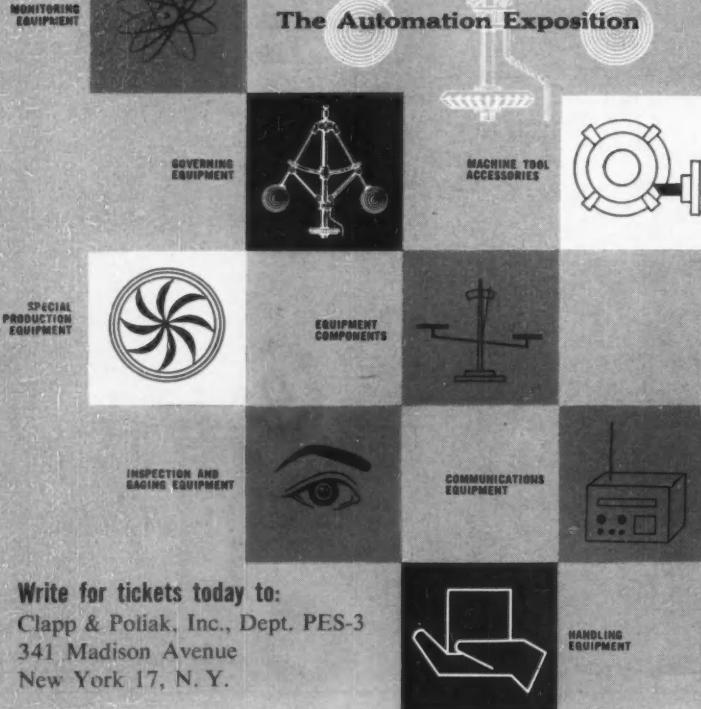
You can see the great MACHINE TOOL SHOW, too!

Your registration badge will admit you, at no additional fee to the Machine Tool Show, first since 1947, at the International Amphitheatre, Chicago, Sept. 6-17, 1955.

the PRODUCTION ENGINEERING SHOW

SEPTEMBER 6-16, 1955
NAVY PIER, CHICAGO

The Automation Exposition



Write for tickets today to:

Clapp & Poliak, Inc., Dept. PES-3
341 Madison Avenue
New York 17, N.Y.

has served as consultant for many large companies, the book provides a refreshing approach to this standard topic. The light, lively style carries the reader through the intricacies of stocks, bonds, investment and mutual funds, annuities, and other topics with a minimum of effort. A glossary provides an easy introduction to investing.

While the author offers several specific rules for intelligent investing, he stresses that each program has to be tailor-made to particular situations. He gives detailed instructions for investing at various income and fund levels and for several distinct purposes.

Case for Tariffs

TARIFFS: THE CASE FOR PROTECTION, by Lewis E. Lloyd. The Devin-Adair Company, 23 East 26th Street, New York 10, N.Y., 207 pages, \$3.50.

The director of business research for the Dow Chemical Company, Dr. Lloyd, takes the generally unpopular side in the controversy over protectionism. Once a free trader, the author reveals the ranges of argument and evidence which have swung his opinions about tariffs around in a full circle.

He takes each of the time-honored arguments for free trade and analyzes it in detail. While admitting that complete free trade may be workable in theory, the book insists that several pre-conditions are necessary before theory can be translated into practise. The several pre-requisites for free trade would, if achieved, result in one world of peace and harmony.

Drips and Squirts

BASIC LUBRICATION PRACTICE, by Allen F. Brewer. Reinhold Publishing Company, 430 Park Avenue, New York 22, N.Y., 286 pages, \$6.75.

Machines are like caged animals. Unless they are fed regularly, their screeches will rise to deafening heights.

To keep machinery performing smoothly at low cost, the proper lubrication must be applied in the right quantities at the right time. These considerations and many others are given detailed step-by-step treatment by the author, who is a consulting lubrication engineer. This practical on-the-job guide should be most helpful to engineers, shop foremen, and purchasing agents.



CUT COSTS with ALLEN Punch Press

**2-Ton Power Bench Type
Powerful, Dependable, Economical**

For light work—stamping, forming, riveting—metal, fiber or other material.

Overall height 20 $\frac{1}{4}$ " . . . Base size 9" x 8 $\frac{1}{4}$ " . . . Die bed 6 $\frac{1}{4}$ " x 8" . . . Ram face 1 $\frac{1}{2}$ " x 3 $\frac{1}{2}$ " . . . Ram stroke $\frac{3}{4}$ " . . . positive $\frac{3}{4}$ " ram adjustment . . . sturdy, single pin, non-repeat hand lever clutch . . . V-belt drive . . . weight 105 lbs.

Requires only $\frac{1}{3}$ H.P. motor.

The machine of a thousand uses! Adequate for many types of work now done on large presses at greater expense.

Fully Guaranteed

Order TODAY. Price \$97.50 F.O.B., Clinton, Mo. (Includes Motor bracket, V-belt, motor pulley, less motor)

ALVA F. ALLEN, DEPT. DR, CLINTON, MO.



Saves Typing Time . . .
Stops Eye Fatigue!

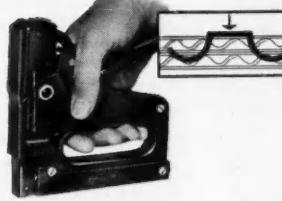
PANAMA "COPY-HOLDER" BOX

Panama-Beaver's exclusive patented carbon paper box has a built-in copy holder that flips open with a flick of the wrist. Keeps copy material upright and in full view . . . speeds work . . . cuts office costs. Folds up neatly under box lid after use. COSTS NOTHING EXTRA when you buy Panama-Beaver Carbon Paper—America's sharpest-writing, cleanest-erasing smudge-free carbon!

Have the Panama-Beaver representative near you show you the Copy Holder Box without obligation!

PANAMA-BEAVER
Ribbons and Carbons

Coast to Coast Distribution
MANIFOLD SUPPLIES CO., 19 Rector St., N.Y. 6, N.Y.
Ebony Duplicating Carbons • Eye-Saver Unimasters • Lustre Colorful Inked Ribbons



Bostitch T5-8 Tacker with Outward Clinch—It anchors staples inside soft materials entirely from the outside. Staple legs spread to form strong, tight clinch (see diagram). Ask your Bostitch Economy Man for a demonstration.

STAPLES HOLD BETTER AT ONE-TENTH THE COST! Trans World Airlines overlook no detail in assuring the safe, swift arrival of air freight shipments. Shipping bills fastened to cartons with even the best tape sometimes tore loose in damp climates. And taping cost \$14 per thousand bills.

A Bostitch Economy Man suggested stapling the bills with a new Bostitch tacker that "spread-eagles" staple legs inside carton walls. TWA tried it, found stapling four times faster than taping and *far superior in holding power*. Cost: \$1.40 a thousand. Now all major TWA stations are Bostitch-equipped!

How much can you save by switching to Bostitch stapling?

Your Bostitch Economy Man can tell you. He's one of 350 trained fastening specialists working out of 123 cities in the U. S. and Canada. There are over 800 kinds of Bostitch staplers in his cost-cutting repertoire. Look up "Bostitch" in your telephone directory, or check the coupon at the right.

BOSTITCH, Inc., 667 Mechanic St., Westerly, R. I.

I'd like to know exactly how stapling can cut costs in our fastening operations. I'm particularly interested in the following applications (please check):

HI-SPEED PRODUCTION FASTENING

- stapling vs. riveting
- stapling vs. spot welding
- stapling vs. screws or bolts
- stapling vs. glue or cement
- stapling vs. tape
- stapling vs. tacks or nails
- stapling vs. solder
- stapling vs. wire or string

PACKAGING and CARDING

- sealing bags (cloth, paper or plastic)
- mounting products on display cards
- fastening items to individual cards

SHIPPING ROOM ECONOMIES

- preparing cartons for filling
- sealing filled cartons
- lining or padding crates
- applying shipping bills or tags

BUILDING APPLICATIONS

- applying asphalt roofing
- laying underfelt
- installing ceiling tile
- applying insulation
- installing low-voltage wiring
- applying shake shingle siding

OFFICE EFFICIENCIES

- filing
- routing
- posting
- binding folders and reports
- preparing advertising dummies

Name _____ Position _____

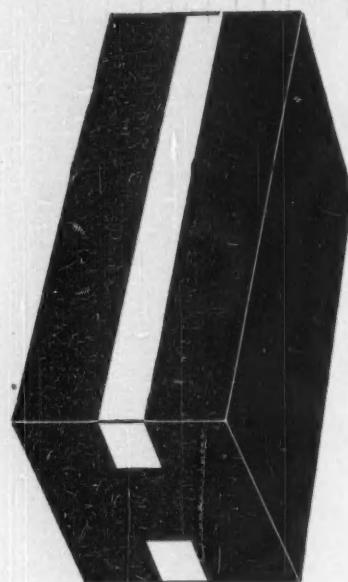
Company _____

Address _____

City _____ Zone _____ State _____

Fasten it better and faster with

BOSTITCH®
STAPLERS AND STAPLES



ONLY TWO STRIPS REQUIRED

Because of its unusual strength, only two strips of TROJAN Cord Tape are required to seal many boxes. This saves time, material and labor in making the closure.

Let us send you full information about TROJAN Cord Tape, the official railroad, truck, express and parcel post box sealing requirements, and the name of a local paper merchant who can supply you with TROJAN Cord Tape. TROJAN Cord Tape may be applied with automatic sealing machinery... approved under Rule 41 Uniform and Consolidated Freight Classification. Write today.



TROJAN CORD TAPE

The GUMMED PRODUCTS COMPANY
Specialists in the gumming of printing papers,
foils and sealing tapes.

Main Offices and Mills: **TROY, OHIO**
Sales Offices: Atlanta, Chicago, Cincinnati, Cleveland, Los Angeles, New York, Philadelphia, St. Louis, San Francisco.—Distributors from coast to coast.

sections the sources of funds acquired during the year, and to what use they were put.

There are two general weaknesses of the funds statement as an operational report for the guidance of management in improving the working-capital position. One is the difficulty in tracing the cause of the working-capital increase; the second is that net working-capital changes are usually so small compared to the other items that their significance is diminished.

Cash Control

In contrast to the funds statement, which is valuable as a once-a-year affair for major capital-expansion planning, a monthly profit-and-loss statement that emphasizes cash changes is more worthwhile for the current control of the cash position. The one below is interesting:

The Simple Company
PROFIT-AND-LOSS STATEMENT
Month Ended January 31, 19—

Net Sales.....	\$100,000
Less—Paid or Payable for:	
Labor and labor benefits.....	\$50,000
Materials, supplies, services.....	25,000 75,000
Net Gain in Cash or Cashables.....	\$25,000
Less—Depreciation. \$ 5,000	
Inventory Decrease 10,000 15,000	
Net Profit.....	\$ 10,000

While this is not an income statement on a truly cash basis, it is very effective for pointing out the results of the period in their effect on liquid funds. A concern manufacturing for inventory would exhibit a decrease in cash and cashables while showing a profit. On the other hand, a firm with a long collection period may show gains in cash and cashables without realizing the actual cash until the receivables are paid.

Any management, with an improved cash position as the goal, would make every attempt to have a gain in the cash and cashables, because of the prominent position of that item in the report. It is obvious from the report itself that this can be done directly by increasing sales and reducing the cost of labor and purchases. Both of those ac-

tions by themselves are highly commendable, but there is little in the statement to show management how to pare costs or to increase sales. Valuable services might be discontinued, impairing the healthy growth of the firm. Worse than that, inventories might be depleted, bringing on production interruption and higher costs.

In total effect on the future of the business, the consequences of concentrating too heavily on the cash type of statement are minor compared to that of being too successful at it and accumulating too many liquid assets.

There are concerns that are proud of a five-to-one quick ratio, without realizing that nearly 80 per cent of their quick assets could and should be put to work earning more profits.

In contrast to reporting methods designed to emphasize cash income and outgo, tax basis reporting methods generally involve a deviation in bookkeeping from generally accepted accounting principles.

Some concerns, gun-shy from the high tax rates of World War II, and the Korean War, and with only net earnings to draw on for capital funds, have set the minimization of Federal income taxes as the financial goal. While the reduction of any charge against profit is a worthwhile endeavor, there are some peculiar circumstances that come up when income taxes are involved.

Corporate income taxes were originally intended to be applied on the profits of a concern as computed in a rational, consistent way. Under the original concept of taxes, any tax savings one year would be collected by the taxing authorities eventually.

Tax Accounting

Through the years, this original plan has disintegrated into taxation levied on income as computed under a very rigid set of standards, which differ from generally accepted accounting principles.

Good tax accounting attempts to lump as many deductions as possible in each year, thereby reducing income and taxes. In doing this, many items are charged off *in toto* instead of being spread out over several years.

Good accounting practise limits the amount deducted from gross revenue to those charges applicable to the period in question. But if tax accounting is practised, certain periods will bear heavier charges than they should, and other periods will be freed of charges applicable to them. This essentially makes the costing of products for pricing purposes impossible from period to period. This is only one of the serious drawbacks to the use of tax accounting for other than purely tax purposes.

Just as tax accounting methods are controlled by tax regulations, tax reporting format is pretty well controlled by *Form 1120, U. S. Corporation Income Tax Return*. If the books of account are set up and governed by tax regulations, the reports from those books will generally follow the return form.

With the tax format of periodic reports as a constant reminder of taxes, management will tend to make every decision in the light of whether or not it will qualify as a current deduction for tax purposes.

There is danger in charging to current expenses those items which should be capitalized. In highly competitive industries, cost determines to a large extent how low a price can be set.

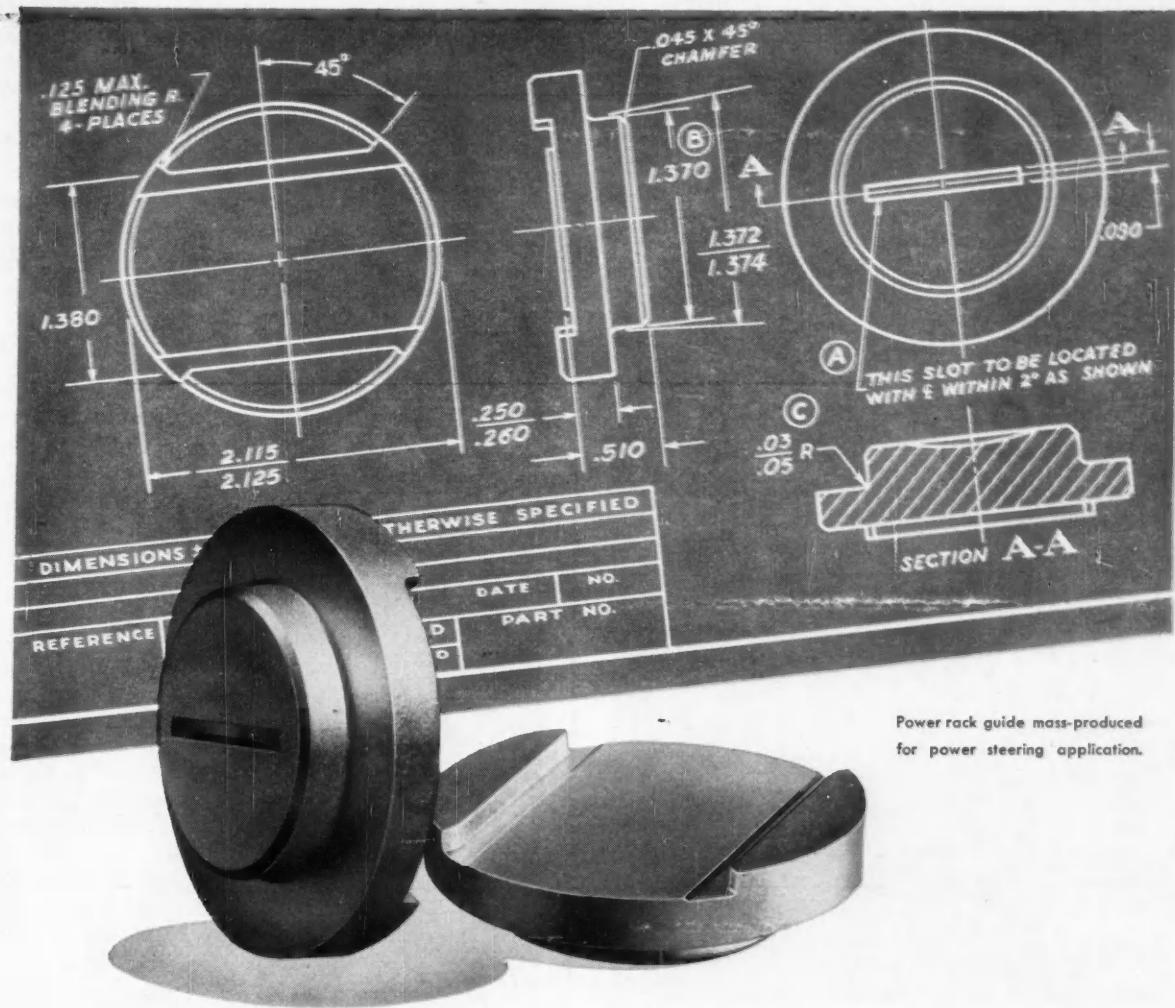
Inventory Evaluation

Another accounting technique that yields different results from ordinary commercial accounting is base-stock inventory evaluation.

Under the more commonly used first-in, first-out method of accounting for inventory, the value of this base stock changes with the market. In times of rising prices, a lower-priced piece would be withdrawn and be replaced with a higher-priced piece, thus increasing the value of the inventory. This increase would then be reflected as an unearned profit in the periodic income statement.

However, it is argued, the concern is being operated for profits from procedures, not from market fluctuations. If the normal, necessary base stock were given a fixed value, then production costs would reflect market changes when they occurred.

One of the arguments presented



Power rack guide mass-produced
for power steering application.

MORAINE METAL POWDER PROCESS MAKES COMPLEX PARTS - AT A SAVINGS

If made by conventional casting and machining methods, this part, which serves many of us every day, would cost more. Made by the Moraine metal powder process, however, the part is mass-produced quickly and economically—to precision standards.

Moraine makes many different parts of complex design from metal powder . . .

parts with a quality and uniformity that make them highly desirable for a multitude of applications.

Many industries are using Moraine's experience in powder metallurgy to reduce the cost and improve the performance of many and varied products. Possibly, Moraine may be of service to you, too.



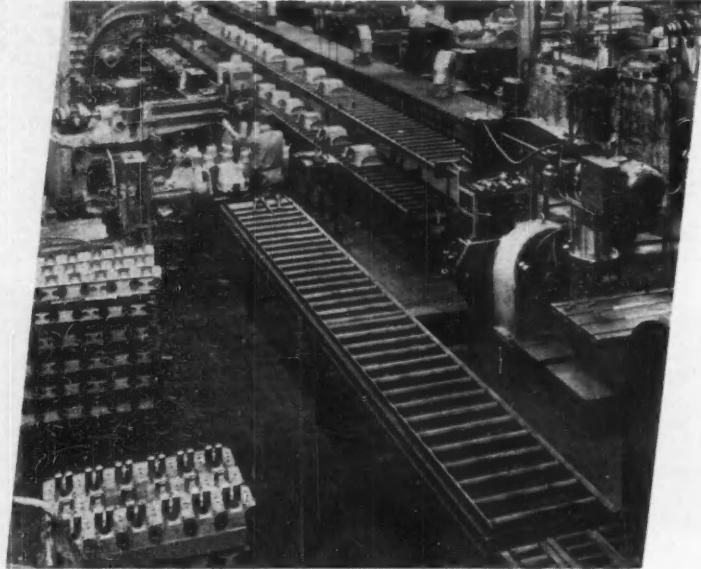
moraine
products

DIVISION OF GENERAL MOTORS, DAYTON, OHIO

METAL
POWDER
PARTS

MATHEWS

**Engineers and Builders of Conveyors
and Conveyer Systems for American
and Canadian Industry
for 50 YEARS . . .**



● It was just 50 years ago, in 1905, that the first Mathews Conveyors were designed and built—and applied in a Minnesota warehouse. From that early equipment has evolved some very spectacular continuous-flow conveying systems—indeed, some of the real "show jobs" of the conveying industry.

In these 50 years, Mathews engineers have developed the most complete line of gravity and power conveyors and special conveying machinery to be found anywhere—to serve nearly every class of industry in the United States and Canada.

Whatever is required—standardized conveyor units or a complete system—you'll find that Mathews is your best bet. Three modern plants. Engineering sales offices and standardized conveyor distributors located in most principal cities.



GENERAL OFFICES . . . ELLWOOD CITY, PENNSYLVANIA
PACIFIC COAST DIV. MATHEWS CONVEYER COMPANY WEST COAST
SAN CARLOS, CALIFORNIA
CANADIAN DIVISION . . . MATHEWS CONVEYER COMPANY, LTD.
PORT HOPE, ONTARIO

*Engineering Offices or Sales Agencies in Principal American and Canadian Cities
Export Representative—Foreign Trade Division of New York Henseatic Corporation*

for base-stock inventory evaluation is that a powerful influence is exerted to minimize the fluctuations of the business cycle by tempering both the extreme optimism of boom periods and the pessimism that prevails during the downward swings. But this influence may very well dull the sensitivities of business by induced security, and forestall corrective actions that should be taken.

This happened to many firms in the textile field during the 1949 recession. Those concerns operating under the base-stock plan were generally slower to take steps to correct a poor inventory situation than those operating under the first-in, first-out methods. While their profit picture did not immediately reflect the decline in the business cycle, their ultimate loss was greater than the others because of the time it took management to recognize the difficult inventory situation.

Direct Cost

Still another accounting technique that yields different results from ordinary commercial accounting is direct costing.

Under orthodox standard-cost accounting procedures, the factory cost of goods is the sum of standard labor, standard direct materials, and standard factory overhead. Engineering contributions to the manufacturing art have made the standard set for direct labor and materials very close to the actual cost realized. However, even with good budgetary control over the cost elements in the overhead, the standard overhead rate can be good only in a set volume of operations because so many of the cost elements are not variable with respect to volume. Accounting correction for this defect is an additional charge, called volume variance, when production is low, and a credit when production is high.

This creates a cost paradox in periods of high production and low sales volume, and in periods of low production and high sales. In the first case, that of inventory building, the high production earns a credit for volume variance. This means low costs in a low-sales period. In the other situation, the low production brings on an additional charge for volume variance, producing high costs and low profits in a high-sales period. In direct costing, this problem has been

tackled by removing the fixed cost from the standard overhead. The truly variable overhead plus direct labor and material are called the direct cost of sales. The fixed charges that have been removed from the overhead are called the "Costs of Being Ready to Produce," which have to be incurred whether or not production is actually taking place. These are charges such as taxes, insurance, and so on, that have to be paid regularly regardless of factory activity, and are deducted *in toto* from the gross profit in order to arrive at net profit.

The thinking of direct costing is similar to break-even point analysis. This, by itself, gives management a very powerful analytical tool for planning while correcting the cost paradox pointed out above. In high production and low sales, more profits are made under orthodox standard-cost accounting techniques than under direct-cost accounting. This is because the surplus of production over sales has been put into inventory at standard cost, which includes standard overhead. Since production is above standard volume, the standard overhead rate is too high, and the correction is made in the statement as a volume variance credit. Under the direct-cost plan, the fixed charges have been eliminated from the inventory and charged wholly against the time period in question.

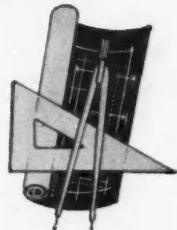
However, there is an effect which might bring on unsatisfactory management action. Where sales outrun production, and inventories are being drawn on, profits under the direct-cost plan are higher than under orthodox accounting. The opposite is true when sales lag behind production during the downward portion of the cycle.

Overcorrection

This tends to exaggerate the normal business cycle, and leads to overcorrective measures. In one company, sales fell off one-third in a single quarter and the first loss was sustained in over ten years. In order to restore the confidence of the creditors, management took quick action to reduce fixed factory and general expenses. This was accomplished by selling a portion of the business and by reduction of the research and development program. These measures seemed altogether too drastic, and, in fact,

Craftsmen of the 20th Century

No. 5 of a series to introduce you to some of industry's outstanding plastics craftsmen



Inspired by the materials at hand, the artisans of other ages fashioned masterpieces of glass and steel, wood and silver.

Today a whole new family of versatile materials is challenging a great new group of craftsmen. Their skills and imagination are creating plastic products that are serving every industry, every home.

Two of these "20th century craftsmen" are pictured on this page.

Monsanto, a major producer of high-quality plastic materials, salutes these men who are helping to mold America's tomorrow.

When your plans call for plastic parts or products, consult an expert custom molder



Merle L. Grob, Peoria Plastic Co., East Peoria, Ill. After six years as Chief Engineer at Peoria Plastic, Mr. Grob reports he has yet to find two jobs alike. Responsible for his company's mold designs and efficient operation, he brings to plastics engineering a background in heavy industry. An early innovation in his shop was to use "O" rings on the mold to permit a freer circulation of water and maintain a more uniform mold temperature. Cycle time on the first job run was cut 75%! Mr. Grob was also one of the pioneers of air ejection, contriving a pin of 1/32-inch piano wire that leaves practically no mark on the molded piece.



Norman Davis, Majestic Molded Products, Inc., Bronx, N. Y. With time out to serve in the Air Force during World War II, Mr. Davis has been pioneering improvements in the molding of plastics since 1939. He joined Majestic Molded Products 7 years ago and is now Vice President and General Manager, overseeing 135 employees. He remembers when a 6-oz. shot was a big job. Today Majestic is molding 200-oz. shots and has a 400-oz. machine on order. Mr. Davis predicts "real progress in custom-molded components is just beginning. More and more industries are learning about the sound engineering properties of plastics."

MONSANTO CHEMICAL COMPANY,
PLASTICS DIVISION, SPRINGFIELD 2, MASS.





This Coupon Brings Your Basic Planning Data on Doors for All Needs of Industry

INTERNATIONAL STEEL COMPANY
2058 Edgar Street, Evansville 7, Indiana

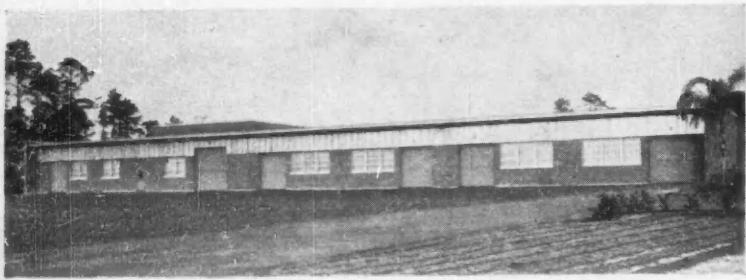
Send me without obligation my personal copy of the new "Doors for Industry":

NAME and POSITION _____

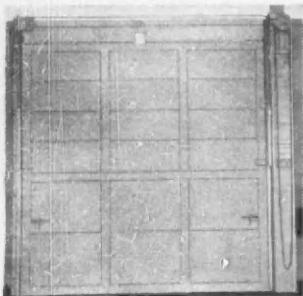
FIRM _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____



another industrial leader—



Pictured above are typical installations of International Turnover Doors at training centers established by a major American industry.

Among the many leaders served by International Doors are:

GENERAL ELECTRIC CO.
BOEING • SERVEL, INC.
OHIO OIL CO. • LOCKHEED
GENERAL FOODS CORP.
THE TEXAS CO. • CESSNA
AMERICAN STEEL & WIRE CO.
INTERNATIONAL NICKEL CO., INC.

SERVED BY **INTERNATIONAL DOORS**

Every year adds an ever-greater number of names to the growing list of American industries using International-Engineered doors — a list that is a cross-section of the small, medium, and major industrial firms constantly seeking greater efficiency in their expanding facilities.

International Doors

- assure fast, easy operation plus permanent dependability
- lower heat loss, minimize maintenance, promote savings and safety
- increase efficient handling of materials and equipment to decrease costs

How well International engineers meet the growing demands to which doors for industry are put is best evidenced by the widespread installation of International doors in more and more structures.

Mail coupon now for your new, complete International Doors Manual. Also, see Sweet's Architectural or Industrial Construction Files.

2058 EDGAR STREET • EVANSVILLE 7, INDIANA



INTERNATIONAL STEEL COMPANY

harmful to the health of the concern. If orthodox standard-cost accounting procedures had been used, it is reasonable to question whether such a drop in sales would have caused a loss, and necessitated such sharp cutbacks.

The Du Pont chart system is a method of reporting based on the management goal of earning a specified return on the gross value of plant and working assets. The choice of gross plant and working assets as a base is in sharp contrast to the investor's base of net worth for computing return. Yet, its soundness from an operating standpoint cannot be questioned. Operating management is supplied a certain amount of cash, inventory, buildings, and equipment to work with. The source of these assets is immaterial operationally.

In developing the return on gross plant and working assets for Du Pont executives, the chart system necessitates two ratios. The first ratio is determined by dividing sales into earnings, and the second is the quotient of sales divided by plant and working assets. This measures the effectiveness of the use of these assets. The product of these two

ratios gives the return on plant and working assets; the sales factors cancel out.

When the Du Pont charts are shown to management, the return on gross value of plant and working assets appears first, followed by charts of earnings on sales and turnover. Any significant change in the first can be traced immediately to one or both of the second factors. By following through to the end of the formula, the individual factor or combination of factors needing attention can be determined and the corrective action taken.

The Du Pont chart system shows two things—a sound, basic goal for management to work toward, and an effective method of reporting the results of operations in terms of that goal.

It should be obvious by now that no one reporting method can, by itself, serve the needs of management without incurring undesirable effects. The answer lies in perfecting a balanced combination of methods which will emphasize the principal goal of management, and prevent following one path too blindly.

THE END



PINES ENGINEERING CO., INC.
AURORA, ILL.

PHOTO-MURALS

Decorate office walls in a practical way that helps promote your products or services

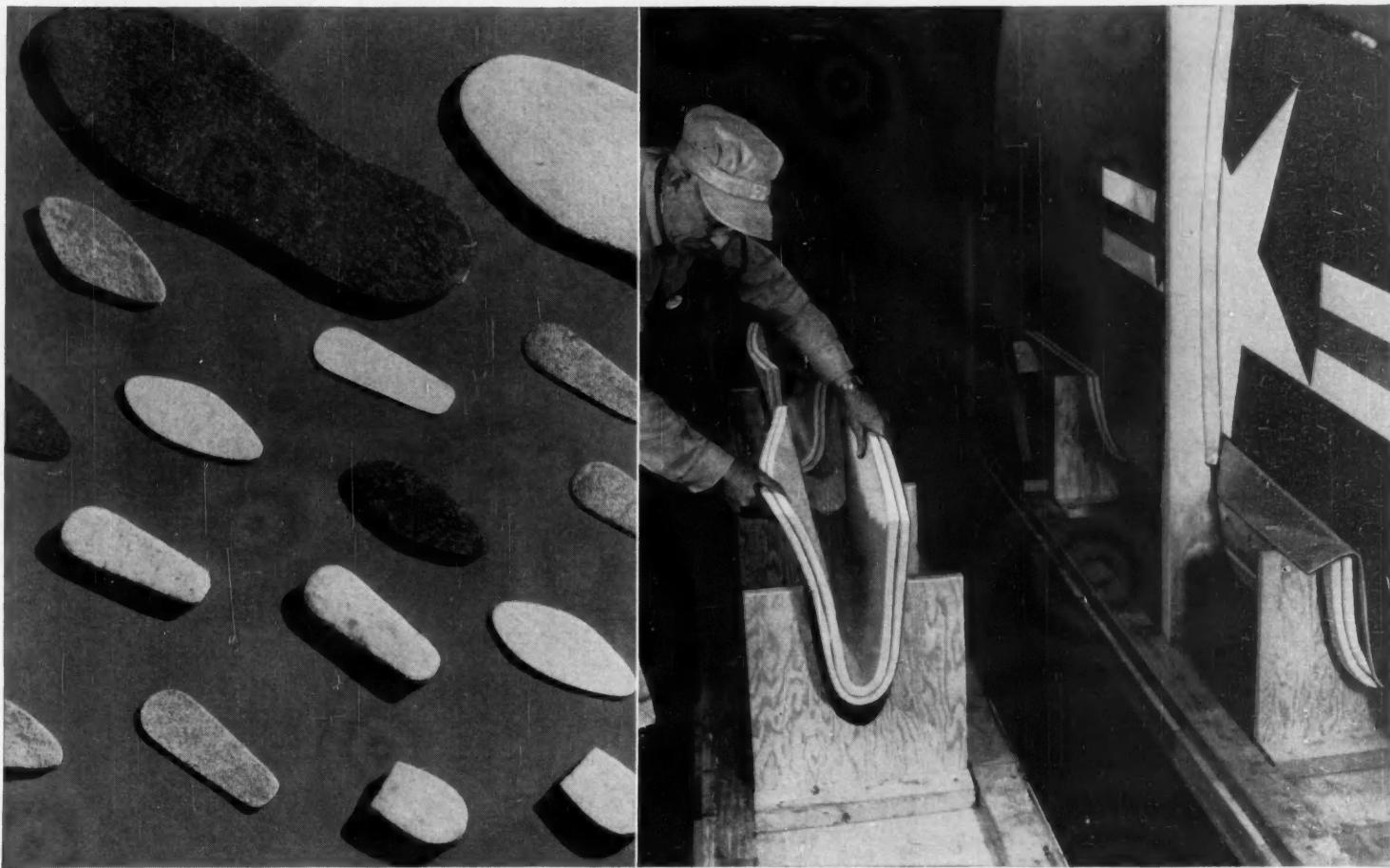
Write for information
on how we produce
Custom Photo-Murals

We have the specialized equipment to make custom photo-murals of any subject, to fit any shape or space... in black and white, sepia or full color. Many leading industries have found this unique method a profitable way to put office walls to work.

WEST-DEMPSTER COMPANY

110 W. Lyon

Grand Rapids, Michigan



**To pad a shoe or ship a wing
Tuffflex products can do it better!**

Shoes and airplanes share at least two things: (1) they're both means of transportation; (2) they both use Tuffflex products. Shoe manufacturers pick Tuffflex non-woven fabrics for soft fillers and heel lifts—jobs Tufflex can do better for less. And airplane wings arrive at their destination undamaged when cradled softly in money-saving Tufflex cushion padding.

Many other industries use Tufflex many other ways. For versatile Tufflex products can be firm or soft, dense or light, thick or thin, stiff or flexible, plain or colored. Its possible uses are unlimited. For interesting booklet, "The Expanding Miracle of Tufflex," suggesting applications to your problems, write Wood Conversion Company, Dept. 239-75, First National Bank Building, St. Paul 1, Minnesota.

TUFFLEX®

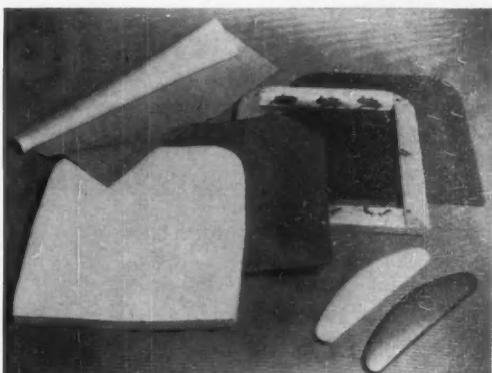
...which has earned
this seal



CUSHIONING • PROTECTIVE
PADDING • SOUND AND
THERMAL INSULATION

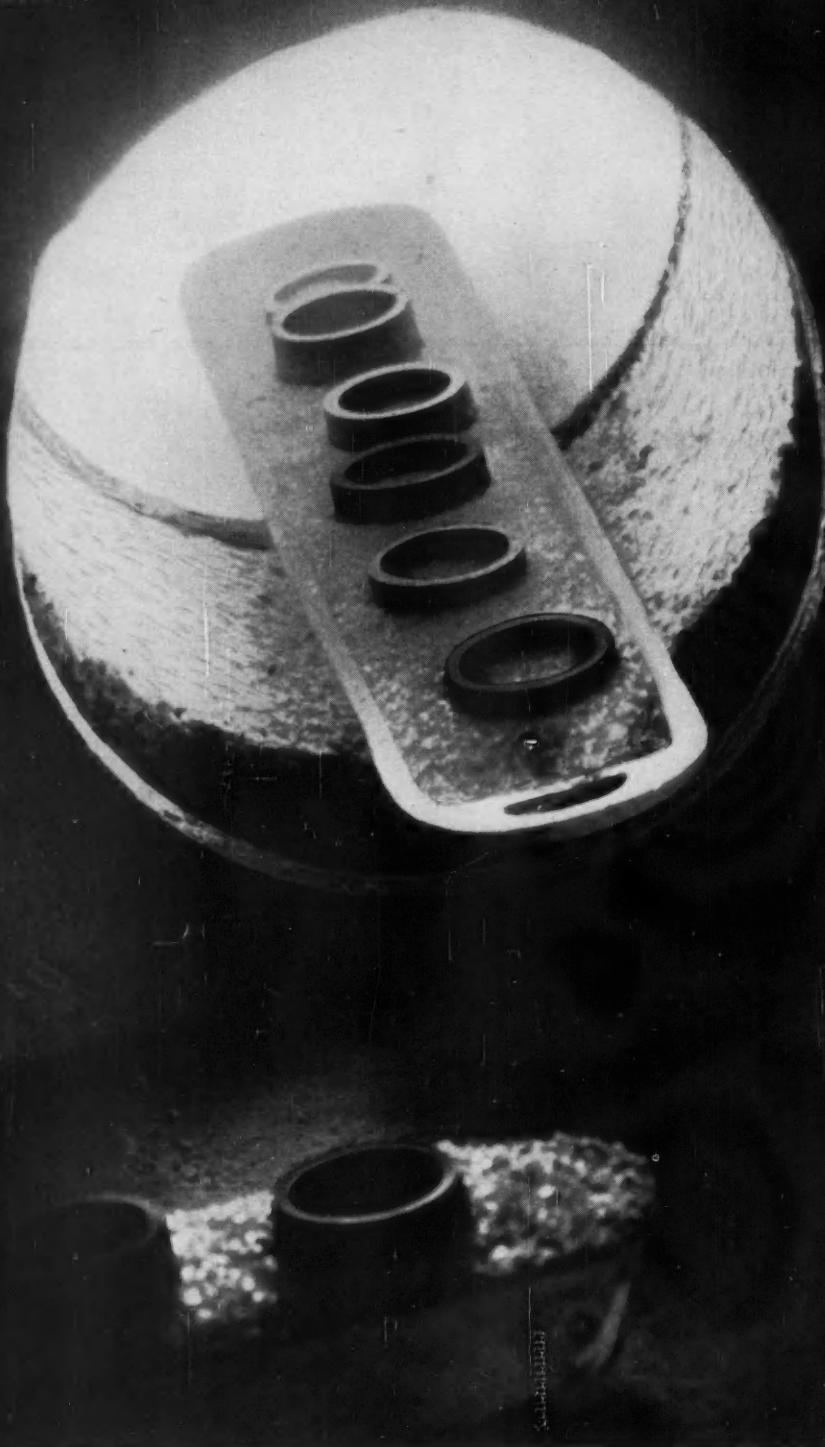


Delicate hearing aid microphones are shipped safely in Tufflex, perfect for almost any packaging problem.



Tufflex cuts cleanly to size for dinette chair seats, backs and arms...assures years of cushioned comfort.

Through IBM research, tomorrow's thinking TODAY...



MAGNETIC CORES are intricately woven into copper-wired frames to become the "memory" of powerful IBM electronic data processing machines such as the new IBM 705.

Memory... in the making

Magnetic cores, each one actually little larger than the head of a pin, are shown here dramatically magnified by the microcamera as they are taken from a heat-treating kiln. Their ultimate function: to store or "remember" information fed into IBM electronic data processing machines for business.

They also illustrate IBM's leading role in applying the latest electronics advances to data processing. Out of this continuing leadership by IBM has come today's "quiet revolution" in American business methods.

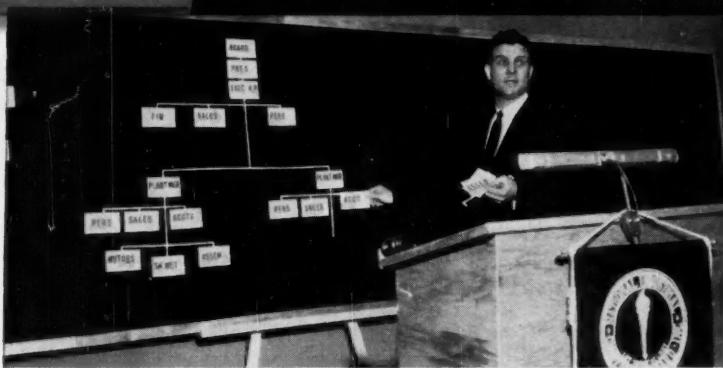
In almost every field of activity, from fundamental research and engineering calculations to everyday business accounting, IBM data processing is rapidly narrowing the critical gap between problems and decisions.

International Business Machines Corp., N. Y. 22, N. Y.

IBM
®

**DATA
PROCESSING**

*World's largest
producer of
data processing
machines*



Well-known ghost, Whiteside Manufacturing Corp., has its organizational bones laid bare on flannel board by Louis A. Allen of NICB's staff.



Everyday personnel problems of typical company constitute framework for two weeks' study of personnel administration in this country-club parlor.

STORY OF A LIVELY GHOST CORPORATION

NICB shows how to add realism to training in personnel administration by hanging problems on imaginary concern

EMPLOYER
RELATIONS

Some 500 executives with personnel interests have dabbled in the employee relations problems of the Whiteside Manufacturing Corp. in the last three and a half years, but the mass interference of too many cooks has done the company no harm. It has, on the other hand, improved the ability of the executives to deal with personnel problems of their own companies, which was the entire purpose in the setting up of the corporation.

For Whiteside, one of history's more troubled industrial outfits, is a purely imaginary concern, established by the National Industrial Conference Board's Division of Personnel Administration as a teething ring for participants in its four-times-a-year courses in personnel administration.

The men who take the course, 50 at a time, range from junior executives to company presidents and have long ago cut their teeth, of course; it is their wisdom teeth they sharpen on the Whiteside Manufacturing Corp.

Twice each spring and twice each fall, enrollees gather at the Seaview Country Club in Absecon, N. J., across a land-locked bay from Atlantic City, to spend two weeks investigating the many ways in which to tackle a broad range of personnel problems. Of the two weeks, they spend ten days in session, from 8:30 A.M. to 5 or 5:30 P.M., less time out for lunch. An alarm clock at the speaker's lectern rings loud at 8:30, and one of the fifteen Conference Board staff members who conduct the sessions begins his talk at the same instant, like a shot from a rifle. Few participants are ever late to a second session.

Creation of the fictitious corporation, with a set cast of characters, has proved useful to NICB Personnel Division Director S. Avery Raube and his instructor-colleagues in a number of ways; it suggests that training directors may find a similar device useful in improving the effectiveness of their teaching.

First, it dramatizes the abstract principles the course concerns itself with. As Rudolph Flesch,

the Plain Talk expert, and many before him have discovered, people are more interested in people than in things or abstractions. It is easiest to grasp the content of a situation if it is presented in terms of people one knows; next easier if it is in terms of real or seemingly-real individuals rather than of general types or abstraction.

Second, the device becomes a great time-saver, a kind of shorthand, as the two-week course progresses. The company and its chief personnel, its start and its organizational form, are described, beginning on the first day. A few details, some new problems, company growth are added as the sessions go on, but the bulk of the description is at the beginning. As a result, when an instructor wishes to make a new point, or a course participant wishes to discuss a situation, it is not necessary to outline the whole background, as it would be with an isolated or disconnected incident; instructor and students both are well acquainted with the company



When sessions start at 8:30 A.M., coffee break is more than a gesture. Except for break and lunch, participants are in session steadily till 5.



Problems become so real, "classroom" discussions so earnest, that solutions are argued out after hours in lobby, grill, or personal quarters.

Automatic, Selective Feeding of Parts at Controlled Rates with . . .

SYNTRON
"Vertical Vibratory"
PARTS FEEDERS

Feeding ceramic wafers to circuit printer for low cost, automatic assembly of electronic equipment.

Positive, finger-tip control of feeding rates plus ability to handle parts of nearly any shape or material enables Syntron Parts Feeders to cut costs and increase capacities on many automatic assembly installations. Parts are fed single file—in oriented position—at exactly the right speed. Electromagnetic operation—no mechanical wearing parts—no installation problem.



. . . and for efficient, low cost, automatic production

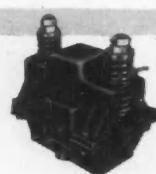


VIBRATORY FEEDERS

Feed bulk materials at controlled rates from a few pounds to hundreds of tons per hour. Feed heavy lumps or fine powders—dry or damp.

ELECTRIC VIBRATORS

For a free flow of bulk materials through bins, hoppers or chutes. Positive—low cost operation.



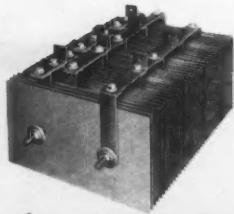
SHAFT SEALS

For low cost sealing of gases and liquids around rotating shafts of compressors, pumps, turbines, etc. Self-lubricating—no repacking expense—easy to install.



SELENIUM RECTIFIERS

Vacuum process manufacture to insure uniform, high quality for top a-c to d-c performance. Largest range of cell sizes in the industry.



Send for complete catalogue data—FREE

SYNTRON COMPANY
774 Lexington Avenue Homer City, Penna.

and with all its personnel already.

Another favorable factor is the tendency of the method to insure that all of the fifteen NICB staff members who conduct various sessions are talking about the same thing when they make cross-references. They have become so familiar with the Whiteside Manufacturing Corp. through the seasons that it almost exists as a real company in their minds; they would no more attribute an incongruous or unrealistic situation or problem to Whiteside than they would confuse Henry Ford II with Harlow Curtice in discussing real-life auto corporations.

Putting Life in a Ghost

For its own use, in fact, the staff has detailed personal descriptions of the leading personnel of the ghost company. The description of Whiteside's president, Jasper T. Simpson, not only gives his age and the fact that he was one of the founders twelve years ago. It describes his physique, his temperament, his education, his method of operation, his ambitions, weaknesses and strengths, his picture of himself, his marriage, his family—where his children are in school, his wife's background and social activities. And so it goes for others who play roles in the imaginary corporation.

Personnel of Whiteside have become so real, to the NICB men, at least, that at a recent staff conference, one member, asked what he thought about a certain staff problem, evaded a direct answer and sparred for time by saying, "Henry Grady would have . . ." so and so; Grady is vice-president in charge of production for the ghostly company.

Because they invented Whiteside to suit their needs, Raube and his colleagues were able to build into it all the organizational and personnel problems they wished to cover in the course, and may still add more. They describe it as a company started by five men with some spare funds, who choose one of their number to begin manufacturing domestic fans with a workforce of twenty in an old garage. As the company succeeds, it grows in payroll and then later expands into production of industrial fans, as well.

Starting with 20 employees, it

serves as an exemplar of the small company with a skeletal functional organization, relying on outsiders for many staff functions. By the end of the two weeks' course, it has 4,000 employees and its own staff experts, and has presented problems of concern to the participants, who have come from all sizes of companies.

In keeping with its nature as a research organization, NICB offers no set answers to the problems it raises in the classes, believing, for one thing, that there is no single answer to any problem, since companies and the settings of the problems vary so widely in life.

The effort is, instead, to teach participants how many facets any problem has, to train them to look at all, and to expose them to the multitudinous variety of answers that NICB research has uncovered—one of which may fit your company, another the other fellow's.

NICB courses differ from most others in that they are entirely staff-conducted and the Board, therefore, can maintain full control over lectures. The Personnel Administration courses, started a little over three years ago, were to be held once in the spring, once in the fall of each year, but demand immediately caused the Board to double the number. The Absecon location isolates the participants from ordinary distractions, but provides them with a wide variety of weekend and Wednesday afternoon recreational opportunities, as well as a favorable situation for informal continuation of class discussions in after-hours.

Other Courses

The Personnel Administration Division has also scheduled one-week courses in conference leadership in New York, Toronto, Dallas, and other cities.

Another NICB division has also inaugurated a series of atomic energy courses for management. Registration for these courses is rigidly limited to ensure proper instruction and discussion periods for the non-technically trained participants. Applications to attend have been so numerous that the Board has decided to conduct two more sessions in the Fall. Thirty atomic energy experts give NICB's only course not conducted entirely by its staff.



HOW MANY JOBS CAN ROLLER CHAIN DO MORE ECONOMICALLY FOR YOU?

In many plants, many things! For direct high speed motor drives, machinery drives, conveying, materials handling and automation systems,—Diamond Roller Chains provide the means of obtaining more useful work from any given power input. They provide *nearly 100% efficiency over their entire life*,—eliminate slippage and the weight and the power wasting bearings of cumbersome gear trains. Maintenance is simple, replacement easy, cost low.

Are you converting the maximum power available in your plant into production?

Now is the time to evaluate your power transfer methods. As older means of power transmission wear out, your program should call for regular replacement with dependable, long-life, efficient Diamond Roller Chains. There is a size and type to handle from fractional to several thousand horsepower.

ALWAYS PRELOADED

For many, many years, Diamond Chain has been preloaded after assembly for the purpose of bringing pin-bushing seating into stabilized relationship prior to field installation.

Trade  Mark

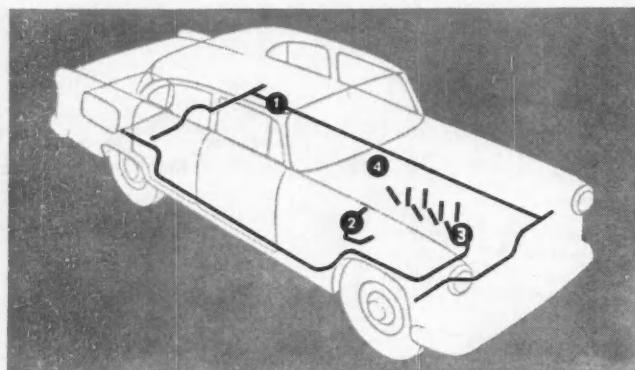


DIAMOND CHAIN COMPANY, Inc.
Where High Quality is Traditional
Dept. 422, 402 Kentucky Avenue, Indianapolis 7, Indiana
Offices and Distributors in All Principal Cities
Please refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND  **ROLLER CHAINS**



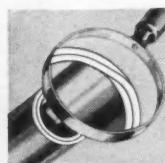
Bundyweld Steel Tubing ...the lifelines in 95% of today's cars!



- 1 Brake lines of extra-strong, dependable Bundyweld assure you that you'll stop in time — when stopping matters.
- 2 Oil lines made with leakproof Bundyweld keep oil where it belongs. No costly repairs or ruined engine for you.
- 3 Bundyweld gasoline lines stay smooth, leakproof despite battering from flying stones, punishing vibration.
- 4 Tough, lightweight push rods of Bundyweld help engineers produce more powerful overhead-type engines.

Today's power-packed, high-speed automobiles give you the utmost in comfort, luxury, and—safety! Safety made possible because of Bundyweld Steel Tubing—used as lifelines in 95% of today's cars!

Automobile manufacturers insist upon Bundyweld for vital gas, oil, and brake lines, because they know they can expect and get rugged, dependable performance. Double-walled Bundyweld Steel Tubing is strong and leakproof, and resists vibration fatigue. Brake lines made of Bundyweld are fifteen times stronger than is necessary to protect your life!



Made by the world's largest producer of small-diameter tubing, Bundyweld Steel Tubing is the only tubing double-walled from a single metal strip, copper-bonded through 360° of wall contact.

BUNDYWELD TUBING®

"The lifelines of your car"

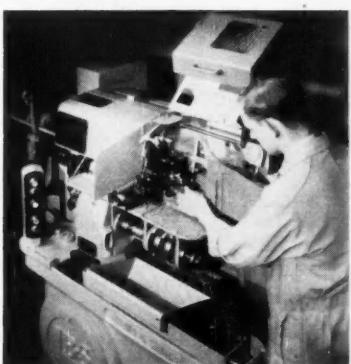
BUNDY TUBING COMPANY • DETROIT 14, MICHIGAN

Here and There in Business

WHAT'S NEW

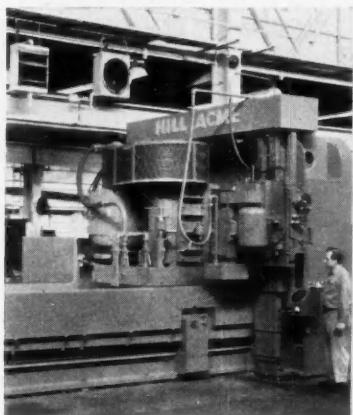
AS OBSERVED BY THE EDITORS

A new automatic screw machine and brand new facilities for producing it were proudly unveiled by Brown & Sharpe Mfg. Company, Providence, R. I., last month. The new No. 00, claimed to be "the fastest automatic in its range," features push-button controls, a readily adjustable turret (see photograph below), a simplified speed-control mechanism, and automatic lubrication. It will handle stock up to one-half inch in diameter, and has 208 spindle speed combinations covering a speed range from 34 to 7,200 rpm.



Useful charts and gadgets offered free of charge by Dayton Rogers Manufacturing Company, Minneapolis 7, Minn., include a combination decimal equivalent chart and calendar (running from mid-year to mid-year), and a combination pipe and conduit gage that is also calibrated for tubing. The gage itself is made of sturdy metal. Both are obtainable from the company on letterhead request.

Another record breaker in the machine tool field is this mammoth surface grinder, built by Hill Acme Company of Cleveland, Ohio. Designed for heavy stock removal on large die blocks and steel plates up to 54 by 144 inches in size, it



is said to eliminate the need for planing rolled and forged shapes before final grinding. The machine, which Hill Acme believes to be the largest of its kind, uses a 42-inch segmental grinding wheel, powered by a 125 horsepower motor. It also has an auxiliary grinding head which can be moved manually or hydraulically. Other features include a full-coverage magnetic chuck, magnetic clutches for precise positioning of cross-rail and spindle, and a "per cent of load" meter.

Bulk packaging, using mammoth cardboard containers that hold as much as a ton of material, was one of the attention-getters at the National Packaging Exposition this Spring, and it's being adopted by companies making everything from plastics to welding rods. Gaylord Container Corporation reports, for instance, that Allis-Chalmers Manufacturing Company is saving as much as 60 per cent in freight costs and gaining other advantages as well by packing tractor service parts in bulk containers that hold up to 2,500 pounds. At A. O. Smith, one 2,000-pound Gaylord Production-Pak replaces 40 of the previously-used 50-pound boxes—with

Industry's first full year performance warranty on all transistors announced by General Electric

MADE POSSIBLE THROUGH PROVED PERFORMANCE IN RIGID LIFE TESTS

NOW, IN ADDITION to the recently announced price reductions, General Electric provides a full year warranty on its complete line of transistors—the first warranty of its kind in the Semiconductor industry.

CONTINUOUS QUALITY checks and life tests in G.E.'s laboratories and plants, and in the field, have proved conclusively the performance superiority and longer life of the G-E transistors. In tests requiring operational stability at temperatures up to 85°C for thousands of hours, G-E transistors have surpassed every specification. The full year warranty is your assurance of this performance.

IN THE LAST 12 MONTHS the list of important manufacturers who have swung over to G-E Semiconductor Products in radio, communications, and other electronic equipment has increased at a startling rate. Why not profit by their successful experience? Now is the time to use all of the many advantages offered by General Electric Semiconductors in the production of your equipment. Especially in view of their recent reductions in price and the new Performance Warranty. For additional information, write today to: General Electric Company, Semiconductor Products, Section X7875, Electronics Park, Syracuse, New York.

Progress Is Our Most Important Product

GENERAL  **ELECTRIC**

The School Teacher

EVERY PERSON reaching adult years looks back with affection to at least one teacher who helped him open the right doors toward the future, and occasionally he hears the voice of her counsel in times of difficult decisions. He recalls the quick compliment for the task well done, as well as the occasional rebuke for the moment of mischief.

The teacher who is dedicated to a career of service has the knack of coaxing and pushing men of limited gifts to high goals, of encouraging men of high

talent to superb attainments. The community is never out of debt to her for services rendered, and her rewards can't be measured in the coin of the realm. She has a secret treasure of satisfaction in the accumulated evidence of men and women in high places who have responded to her friendly guidance.

To impart wisdom by precept, and to mould character by example, is a large responsibility accepted by many noble men and women in our schools. They are entitled to the understanding of all our people; the young in anticipation of life and the old in appreciation of the benefits received.



This advertisement is one of a series devoted to the business and professional men and women who render distinguished service to their communities.

Dun & Bradstreet, Inc.

OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES

Letterhead Loafing?

On your sales jobs? Impressing customers is a major function of your letterheads. Modern designs, quality engraved by letterhead experts, can win prestige for your company. If you would like to improve your letterhead, write on your letterhead for analysis—free to users of 10,000 letterheads per year. State annual usage.

If it's worth seeing, put it on a Hill

R.O.H. HILL, INC.
Fine Business Cards and Letterheads
270 D-1 Lafayette St., N.Y. 12, N.Y.

DRAKE, STARTZMAN, SHEAHAN
AND BARCLAY
Distribution and Materials
Handling Consultants
CONTROL, MOVEMENT and STORAGE
OF MATERIALS
41 East 42nd Street New York 17, N.Y.

Are you looking for a PUBLISHER?

If so, send for our free, illustrated booklet titled *To the Author in Search of a Publisher*. Tells how we can publish, promote and distribute your book. All subjects considered. New authors welcome. Write today for Booklet DR. It's free.

VANTAGE PRESS, Inc., 120 W. 31 St., N.Y. 1
In Calif.: 6255 Hollywood Blvd., Hollywood 28
In Wash., D.C.: 1010 Vermont Ave., N.W.

Louis J. Glickman
REALTY INVESTMENTS
565 FIFTH AVENUE • NEW YORK 17, N.Y.

A clear explanation of the traffic manager's work

This book provides a clear working understanding of the fundamentals of industrial transportation . . . covering the entire field from the practical operating viewpoint of an industrial traffic manager who has spent more than 20 years in traffic management.

PRACTICAL HANDBOOK OF INDUSTRIAL TRAFFIC MANAGEMENT

By RICHARD C. COLTON

Vice President, Lykes Brothers Company, Inc.
6x9 1/4 • 384 pages, 63 ills., \$6.00

A MODERN INDUSTRY BOOK

The material in this book provides both valuable basic information for the beginner and a broader understanding for the professional. Its coverage is so broad and is presented in such an easy-to-grasp, factual manner, the reader can obtain in a relatively short time a fundamental understanding of this difficult and technical profession.

Separate treatment is given to rail, motor, water, freight forwarder, air and express service. The book covers freight rates, bills of lading, freight claims, a complete review of export and import, passenger traffic from a "travelling-on-company-business" viewpoint . . . and many other topics.

Order from Book Department,
Dun's Review and Modern Industry,
99 Church Street, New York 8, N.Y.

corresponding savings in handling time, inventory control, and ease of storage, for customers as well as for A. O. Smith itself. Producers of chemicals and plastics using the new containers include such well-known companies as Dow and Rohm & Haas, and Raybestos-Manhattan is using them for asbestos materials.

Visibility keynotes Hyster Company's new upright for lift trucks, called the *Monomast*. As its name implies, the new upright is a single, centrally-located unit instead of the



usual double-column assembly. Yet, according to Hyster, the new design has much greater torsional rigidity and less deflection than conventional models. It's also said to have a greater lifting speed—58 feet a minute—and a correspondingly larger lowering speed. Both hydraulic and non-hydraulic attachments can be mounted on the unit, which will be available for both the Hyster UC-30 and YC-40 trucks.

For industrial jobs, Ford Motor Company's Tractor and Implement Division has designed this rear-mounted, reversible scoop which attaches to the standard Ford tractor, is controlled from the tractor seat; and, says Ford, can do a wide variety of industrial jobs rang-



A positive new way to cut material handling cost

In many plants it is necessary to call a heavy duty two ton lift truck with a driver to move small loads weighing a few hundred pounds.

Now, you can cut this high cost method of handling small items by using a number of Economy Walkie-Worklifters stationed throughout your plant right where they are needed for light duty lifting and moving. Save the big trucks for the big jobs.

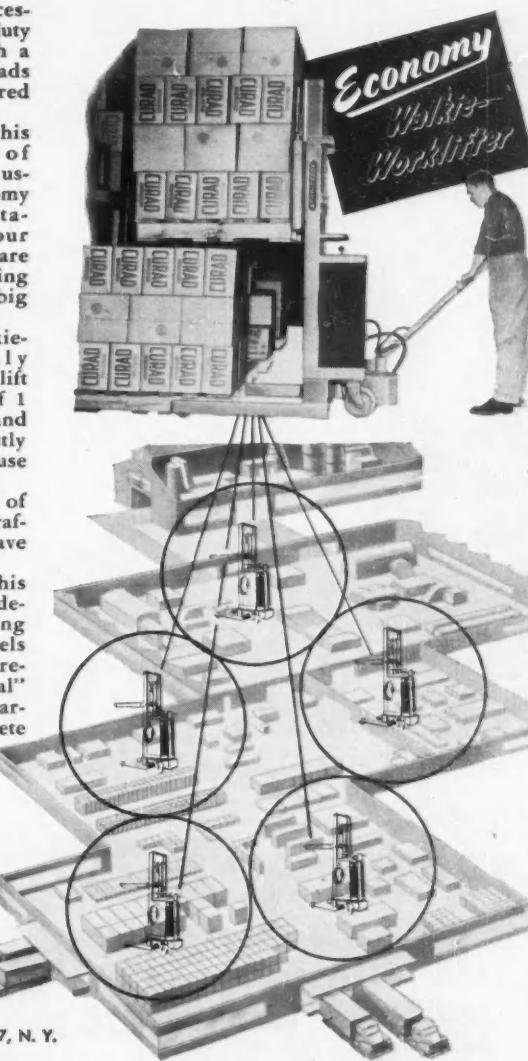
You can get 3 Walkie-Worklifters (only \$1148.00 for the 60" lift model) for the price of 1 heavy duty lift truck, and they are much less costly to operate. Anyone can use a Walkie-Worklifter.

This is a new kind of material handling and traffic efficiency that will save money in many plants.

Take advantage of this important new Walkie development now. Nothing else like it. Many models are available for various requirements or a "special" can be built to fit your particular need. Get complete information; mail the coupon, wire or phone.

ECONOMY ENGINEERING CO.

(Est. 1901)
4516 W. Lake St.,
Chicago 24, Ill.
Phone —
ESTebrook 8-9110
Eastern Sales Office
342 Madison Ave., New York 17, N.Y.
Phone — Murray Hill 2-8940
Representatives in all principal cities



Quick Facts

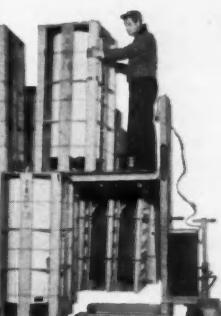
Walkie-Worklifter lifting capacity 1000 lbs. Welded structural steel construction — Batteries and built-in charger included.

Standard platform models have 60" lift — telescopes up to 110".

Straddle type fork models with lift up to 108".

Standard models will pass through doorways and turn sharp corners in narrow aisles.

A safety feature — just let go the handle and it stops itself on the spot with automatic brake.



Extension cord with push-button control enables the operator to ride up with the load.

ECONOMY ENGINEERING CO.
4516 W. Lake St., Chicago 24, Ill.

Attention Mr. Carl Rhodes:

Would like demonstration of Walkie-Worklifter in our plant.

Mail copy of bulletin.

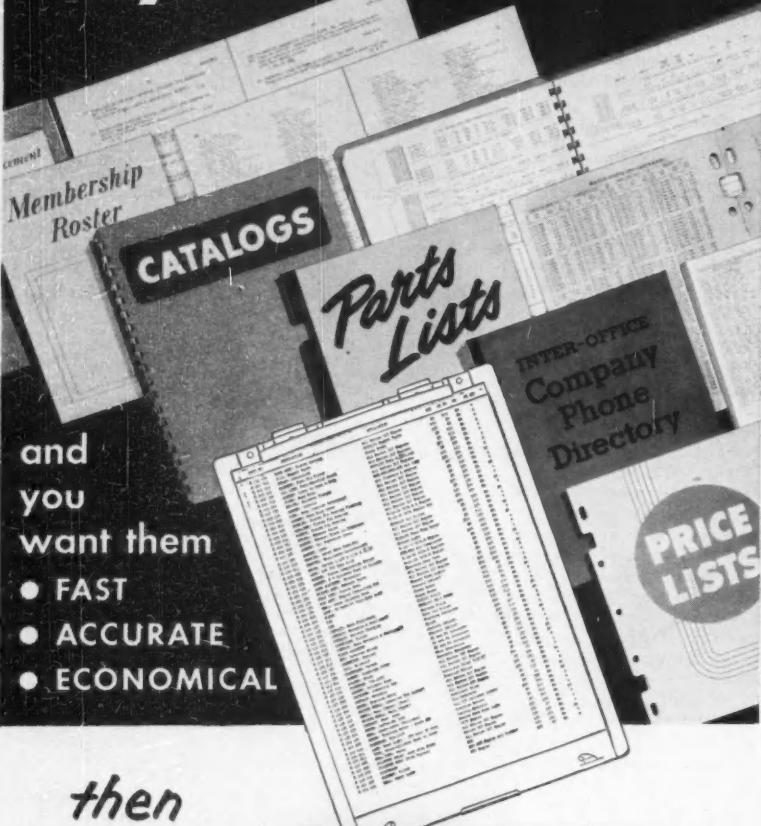
MY NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

If you use...

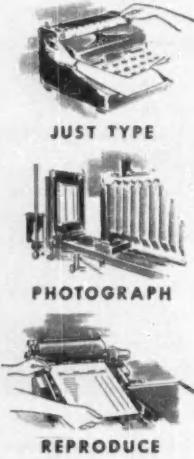


and
you
want them
• FAST
• ACCURATE
• ECONOMICAL

then
you need

**ACME VISIBLE
PHOTO PANELS**

the quick, easy way to reproduce lists



Save time and expense of typesetting; your typewriter is your compositor. Each line typed on individual card. Revisions quickly made, listings added or deleted, page arrangements changed and illustrations or headings added. Always available for instant reference or use, easily kept up to date in your office and under your control, conveniently and compactly filed.

Reproductions can be made any proportionate size and printed by offset, planograph or other methods of commercial or office reproduction.

Ask Acme for details. Find out how much time and money you can save with Acme Photo Panels.

ACME VISIBLE RECORDS, INC.

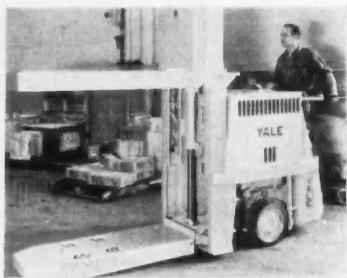
CROZET, VIRGINIA

DISTRICT OFFICES AND REPRESENTATIVES IN PRINCIPAL CITIES

ing from material handling to earth moving. The scoop is 33 inches long, 34 inches wide, and 47 inches high. Weight is 200 pounds.

Two unusual trucks, designed to meet special needs, are pictured here. One, made by Raymond Corp., is a reach truck which can handle 3,000-pound loads-reaching out to pick them up, and then retracting for transportation. According to the manufacturer, it will operate in six-foot aisles, and handle pallets or skids of varying sizes.

The other new truck, made by Yale & Towne, is designed to handle two skids at once. It's a 4,000-pound unit fitted with two plat-



forms that operate independently and can be nested, if desired, or separated to a maximum vertical distance of 62 inches.



An end to backaches and truck drivers' complaints is promised by Bostrom Mfg. Company, Milwaukee, Wis. It claims that its new "human engineered" truck seat, featuring a torsional rubber spring suspension system, "improves the isolation of vibration and shock by 500 per cent, giving the truck driver a five times better ride" as compared to conventional truck seats; and that seat depth, height, and position can be adjusted "to accommodate 99 per cent of all drivers." The new design will also be made available for use on other rough-riding vehicles.

DUN'S REVIEW
and Modern Industry

99 CHURCH STREET, NEW YORK 8, N.Y.

NORMAN C. FIRTH, *Editor and Publishing Director*
VIOLA V. ANDERSON, *Administrative Assistant*

RICHARD L. KRAYBILL, *Managing Editor*

CLARENCE SWITZER, <i>Art Director</i>	H. E. BLANK, JR., <i>Consulting Editor</i>
ANNESTA R. GARDNER, <i>Industrial Editor</i>	H. LORRAINE CARSON, <i>Business Conditions Editor</i>
ALFRED G. LARKE, <i>Employer Relations Editor</i>	JAMES K. BLAKE, <i>Marketing Editor</i>
JOSEPH A. D'ANDREA, <i>Statistician</i>	

Associate Editors: JOHN DREXLER, THOMAS KENNY, CHARLES T. DANIEL
Contributing Editors: EDWIN B. GEORGE, A. M. SULLIVAN, RALPH J. WATKINS
Production: ROY PAKANSKY

WALTER F. GRUENINGER, *Circulation Director*

ALVAH B. WHEELER, *Advertising Director* ALEX J. DUGHI, *Sales Manager*

New York (99 Church St.): GEORGE MATURNIAK, MARK McDONALD,
FREDERIC A. EWALD, BERT BERNE

Chicago (300 W. Adams St.): JOHN KROM, RALPH O. McGRAW

Cleveland (Terminal Tower): CARL YODER

Detroit (Cadillac Tower): CARL NEPPACH, JR.

Pacific Coast (57 Post St., San Francisco, and 2330 W. Third St., Los Angeles):

ROBERT W. WALKER CO.

Published monthly by Dun & Bradstreet Publications Corporation. J. Wilson Newman, President; Norman C. Firth, Alvah B. Wheeler, Alex J. Dughi, Vice-Presidents; Arthur Garrett, Treasurer; Owen A. Sheffield, Secretary; Viola V. Anderson, Assistant Secretary. Directors: Fred H. Brockett, Alex J. Dughi, Norman C. Firth, Roy A. Foulke, Arthur Garrett, J. Wilson Newman, Alvah B. Wheeler, and Arthur D. Whiteside.

ADVERTISING INDEX

ACME VISIBLE RECORDS, INC.	86
E. H. Brown Advertising Agency	
ALAN WOOD STEEL COMPANY	5
Dorensus-Eshleman Company	
ALLEGHENY LUDLUM STEEL CORPORATION	61
Walker & Downing, General Agency	
ALLEN, ALVA F., INDUSTRIES	70
Cooper Advertising Agency	
ALLEN, R. C., BUSINESS MACHINES, INC.	64
Wesley Aves Associates, Inc.	
ALLIED PRODUCTS CORPORATION	44
Gray & Kilgore, Inc.	
ALLIED RESEARCH PRODUCTS INC.	4
Emery Advertising Corporation	
AMERICAN APPRAISAL COMPANY, THE	60
The Buchen Company	
AMERICAN CREDIT INDEMNITY COMPANY	56
VanSant, Dugdale & Company, Inc.	
AMERICAN TELEPHONE & TELEGRAPH COMPANY	88
N. W. Ayer & Son, Inc.	
ARNOLT CORPORATION	26
Scantin & Company	
AXELSON MANUFACTURING COMPANY	Cover II
Grimm & Craigie, Inc.	
BAKELITE COMPANY, A DIVISION OF UNION CARBIDE AND CARBON CORPORATION	Cover III
J. M. Mathes, Inc.	
BALTIMORE & OHIO RAILROAD	12
The Richard A. Foley Advertising Agency	
BANKERS BOX COMPANY	56
Frank C. Jacobi Advertising	
BARRETT-CRAVENS COMPANY	14
The Buchen Company	
BOSTITCH, INC.	71
N. W. Ayer & Son, Inc.	
BREUER ELECTRIC MFG. CO.	16
Grimm & Craigie, Inc.	
BUNDY TUBING COMPANY	82
Brooke, Smith, French & Dorrance, Inc.	
BUNN, B. H., CO.	9
Robertson, Buckley & Gotsch, Inc.	
BURROUGHS CORPORATION	15
Campbell-Ewald Company	
CHASE MANHATTAN BANK, THE	3
Albert Frank-Guenther Law, Inc.	
CHESAPEAKE AND OHIO RAILWAY	25
Robert Conahy, Inc.	
CHEVROLET DIVISION, GENERAL MOTORS CORPORATION	43
Campbell-Ewald Company	
CHRYSLER CORPORATION, AMPLEX DIVISION	52
Ralph Sharp Advertising Inc.	
CITIES SERVICE COMPANY	62
Albert Frank-Guenther Law, Inc.	
COLUMBIA RIBBON AND CARBON MFG. CO., COLITHO DIVISION	69
E. M. Freystadt Associates, Inc.	
COMMERCIAL CREDIT COMPANY	23
VanSant, Dugdale & Company, Inc.	
CUTLER-HAMMER, INC.	57
Kirkgasser-Drew	
DIAMOND CHAIN COMPANY, INC.	81
Kirkgasser-Drew	
DRAKE, STARTZMAN, SHEAHAN AND BARCLAY	85
Marssteller, Rickard, Gebhardt and Reed, Inc.	
DUN & BRADSTREET, INC.	84
DYNAMIC FILMS	28
Ben-Mar Agency, Inc.	
EAGLE-PICHER COMPANY, THE	20
The Ralph H. Jones Co.	
ECONOMY ENGINEERING CO.	85
Kreicker & Meloan, Inc.	
FLORIDA NATIONAL GROUP OF BANKS, THE	45
FORCE, WM. A., & COMPANY, INC.	14
Philip I. Ross Co.	
GENERAL AMERICAN TRANSPORTATION CORPORATION	41
Weiss and Geller, Inc.	
GENERAL ELECTRIC COMPANY	83
Maxon, Inc.	
GLICKMAN, LOUIS J.	85
Pace Advertising Agency, Inc.	
GRAPHIC SYSTEMS	42
Dienier & Dorfskin, Inc.	
GUMMED PRODUCTS COMPANY, THE	72
E. M. Freystadt Associates, Inc.	
HANSEN, A. L., MFG. CO.	14
J. M. Haggard, Advertising	
HELLER, WALTER E., & COMPANY	66
R. M. Loeff Advertising, Inc.	
HILL, R. O. H., INC.	85
Reed-Warren	
INSURANCE COMPANY OF NORTH AMERICA	54-55
N. W. Ayer & Son, Inc.	
INTERNATIONAL BUSINESS MACHINES CORPORATION	78
Benton & Bowles, Inc.	
INTERNATIONAL STEEL COMPANY	76
Keller-Crescent Co.	
IRONS & RUSSELL COMPANY	16
Knight and Gilbert, Inc.	
JANETTE ELECTRIC MFG. CO.	68
Lloyd M. Rosenow, Inc.	
JOHNSON & HIGGINS	46
Doremus & Company	
KINNEAR MANUFACTURING CO., THE	28
Wheeler-Kight & Gainey, Inc.	
LEHIGH WAREHOUSE & TRANSPORTATION COMPANY	59
Burke Downing Adams, Inc.	
L. O. F. GLASS FIBERS COMPANY	65
Brooke, Smith, French & Dorrance, Inc.	
MAGLINE, INC.	16
Rossi and Company	
MANIFOLD SUPPLIES CO.	70
Richard & Gunther, Inc.	
MARSH & MCLENNAN, INC.	52
Doremus & Company	
MARSH STENCIL MACHINE CO.	28
Roman Advertising Company	
MATTHEWS CONVEYER COMPANY	74
Meek and Thomas, Inc.	
MCBEE COMPANY, THE	27
C. J. LaRoche and Company, Inc.	
MILWAUKEE DUSTLESS BRUSH CO.	60
Al Her Advertising Agency	
MONSANTO CHEMICAL COMPANY, PLASTICS DIVISION	75
Needham, Louis and Brorby, Inc.	
MORaine PRODUCTS DIVISION, GENERAL MOTORS CORPORATION	73
Campbell-Ewald Company	
OILJAK MANUFACTURING COMPANY, THE	22
Kenyon-Baker Co., Inc.	
OXFORD FILING SUPPLY CO.	45
Joseph Reiss Associates	
OZALID DIVISION, GENERAL ANALINE & FILM CORPORATION	10
L. E. McGivern & Co., Inc.	
PENNSYLVANIA RAILROAD	29
Al Paul Leffton Company, Inc.	
PITNEY-BOWES, INC.	12
L. E. McGivern & Co., Inc.	
PROPHET COMPANY, THE	19
L. J. DuMahaut Advertising Agency	
PRODUCT ENGINEERING SHOW	70
James R. Flanagan Advertising Agency	
RECORDAK (SUBSIDIARY OF EASTMAN KODAK COMPANY)	67
J. Walter Thompson Company	
REFLECTAL CORPORATION	87
Robertson, Buckley & Gotsch, Inc.	
REMINGTON RAND, INC.	58
Leeford Advertising Agency, Inc.	
REO MOTORS, INC., SUBSIDIARY OF BOHN ALUMINUM AND BRASS CORPORATION	6-7
Zimmer, Keller & Calvert, Inc.	
REVERE COPPER AND BRASS INCORPORATED	8
St. Georges & Keyes, Inc.	
REVOLATOR CO.	36
LaPorte & Austin, Inc.	
ROBBINS & MYERS, INC.	11
Erwin, Wasey & Company, Inc.	
ROYAL BANK OF CANADA, THE	42
Albert Frank-Guenther Law, Inc.	
SERVEL, INC.	17
Ross Roy, Inc.	
STEELCASE INC.	24
Wesley Aves & Associates, Inc.	
SYNTRON COMPANY	80
Servad, Inc.	
TEXAS COMPANY, THE	Cover IV
Erwin, Wasey & Company, Inc.	
TEXTILE BANKING COMPANY, INC.	53
L. E. McGivern & Co., Inc.	
TORRINGTON MANUFACTURING COMPANY, THE	26
Graceman Advertising, Inc.	
TRAVELERS, THE	50
Young & Rubicam, Inc.	
UNDERWOOD CORPORATION	18
Brooke, Smith, French & Dorrance, Inc.	
UNION PACIFIC RAILROAD	60
The Caples Company	
VANTAGE PRESS, INC.	85
Metropolitan Advertising Company	
VICKERS INCORPORATED	48
Witte & Burden	
WAGNER ELECTRIC CORPORATION	87
Arthur R. Mogge, Inc.	
WEST BEND EQUIPMENT CORP.	42
Morrison-Greene-Seymour, Inc.	
WEST-DEMPSSTER COMPANY	76
Wallace-Lindeman, Inc.	
WEST DISINFECTING COMPANY	13
G. M. Basford Company	
WING, L. J., MFG. CO.	18
Willard G. Myers Advertising Agency	
WOOD CONVERSION COMPANY	77
The Cuchen Company	
ZIPPO MANUFACTURING COMPANY	45
N. W. Ayer & Son, Inc.	



"Quite a roof! . . . No painting involved either inside or out . . ."

"... high rigidity and strength . . . full freedom for expansion and contraction . . . cuts summer heat . . ." These are some of the words used by FACTORY editors to describe new Ingersoll Roof Deck. The occasion was a Special Award to the new Sunstrand Machine Tool Co. plant, Belvidere, Ill., for "an unusual feature of broad significance." Maintenance-free Ingersoll Roof Deck, in either the Aluminum or the Porcelain Enamel type, is available for your new plant. Saves money, down-time, and trouble for the entire life of the plant!

*Annual awards made by FACTORY MANAGEMENT AND MAINTENANCE

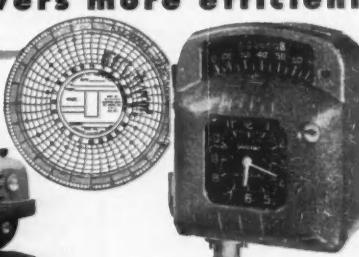
Ingersoll
ROOF DECK



Send today for these
2 new illustrated
bulletins describing
Ingersoll Aluminum
and Porcelain Enamel
Roof Decks. No
obligation.

REFLECTAL CORPORATION
A subsidiary of Borg-Warner Corp.
310 S. Michigan Ave., Suite 2866,
Chicago 4, Ill.

IF YOUR FIRM
OPERATES
ITS OWN TRUCKS . . . help make your
drivers more efficient



The Tachograph is a recording speedometer for trucks. It permanently records on a wax-coated chart when truck started, when it stopped, when it idled, speed and distance traveled.

While good drivers can be commended, a supervisor can correct a poor driver's road habits . . . habits that wear out trucks and tires sooner, wastefully consume gas and oil and cause accidents.

Wagner Electric Corporation 6439 Plymouth Ave., St. Louis 14, Mo.

Please send a copy of Bulletin SU-3.

Name and Position _____

Company _____

Address _____

City _____ State _____

We operate _____ Vehicles _____

\$55-8

TACHOGRAPH
the recording
speedometer

Distributed only by
**WAGNER ELECTRIC
CORPORATION**

"Like adding another full-time salesman— for only \$75 a month"

**That's what one company found when it
used Long Distance systematically**

Recently the sales manager for an eastern electrical company decided to find out how Long Distance could be used to increase sales at low cost.

He called in a telephone company representative. They worked out a plan for integrating Long Distance into the company's sales program. The plan was tried—and results were measured.

The sales manager's summary: "The increased efficiency and additional orders produced by Long Distance are worth as much to us as one more full-time salesman on the road." The cost: only \$75 a month.

We have some specific suggestions on how Long Distance can save time and produce more sales in your business. We'd like to pass them along to you. Just call your Bell Telephone Business Office. A representative will visit you at your convenience.

LONG DISTANCE RATES ARE LOW

Here are some examples:

New York to Philadelphia	50¢
Cleveland to Indianapolis	90¢
Chicago to Pittsburgh	\$1.15
Boston to Detroit	\$1.40
Washington, D.C., to San Francisco .	\$2.50

These are the daytime Station-to-Station rates for the first three minutes. They do not include the 10% federal excise tax.

Call by Number. It's Twice as Fast.

BELL TELEPHONE SYSTEM



HOW TO PICK PLASTICS

**WANT TO BEAT THE HEAT
and be bright about it?**



Phenolics are always news . . .

Good news. Because manufacturers still gain sales advantages in imaginative application of the workhorse plastic — BAKELITE Brand Phenolics.

You may be profitably surprised at the wide variety in BAKELITE Phenolics. There are types that feature chemical resistance, improved impact, and superior electrical insulating quality. Improved surface smoothness, faster molding cycles and other characteristics are well worth investigating.

But remember, phenolics are only one group of BAKELITE Plastics. Whatever your problems, there's a BAKELITE Plastic — vinyl, fluorothene, polyethylene, styrene, epoxy, as well as phenolic — that should be just suited to the job. Greatest variety and largest resources are your assurance. Why not find out about the whole family by sending for a copy of our booklet, "Condensed Reference File of BAKELITE Plastics and Resins." Write Dept. GO-42.

BAKELITE COMPANY, A Division of Union Carbide and Carbon Corporation UCC 30 East 42nd Street, New York 17, N. Y.
The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC



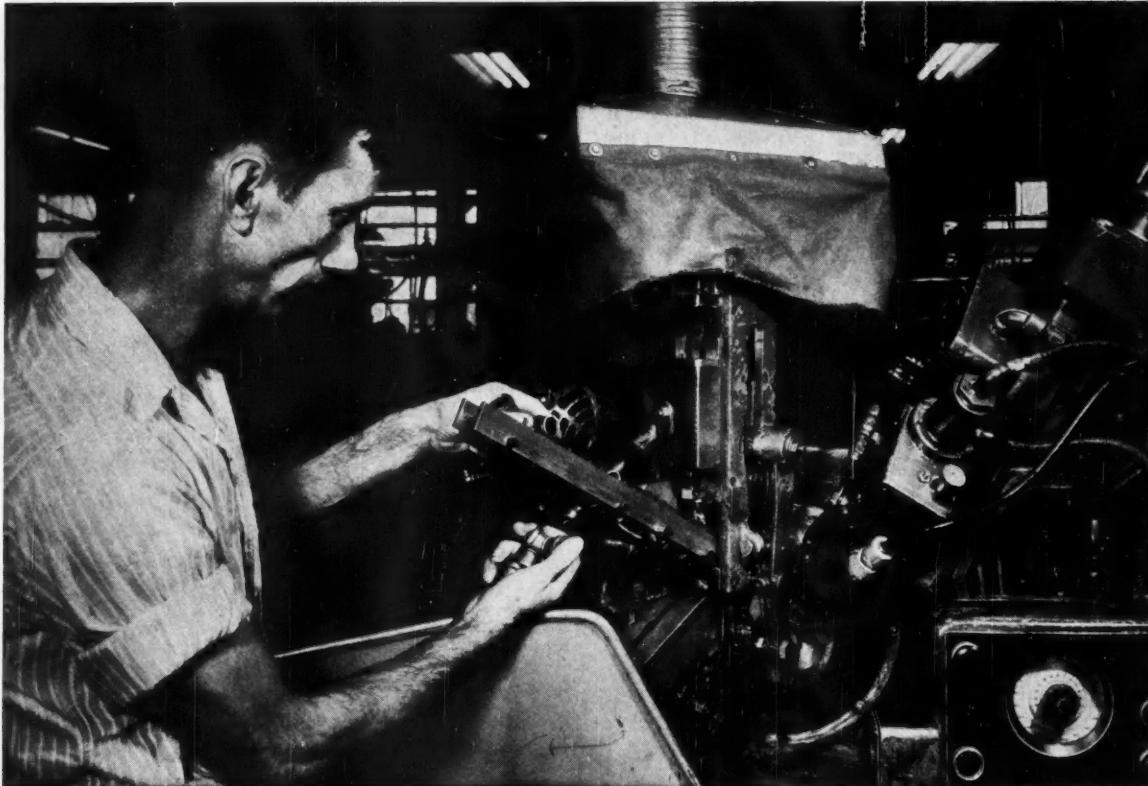


HERE'S ONE EXAMPLE of how better lubrication and lubrication engineering service — *Texaco* — increased production, and reduced unit costs.

An Ohio firm (name on request) was grinding bearing cones. Contamination of the machine lubricant by the grinding oil was causing excessive machine downtime with consequent loss of production.

A Texaco Lubrication Engineer surveyed the situation and recommended use of *Texaco Cleartex Oil* — one product to be used as both grinding oil and machine lubricant. Machine downtime was virtually eliminated and production boosted to approximately double the number of pieces per wheel dressing.

Benefits like these explain why "the tough jobs go to Texaco." Let a Texaco Lubrication Engineer survey *your* plant and help you produce more at lower unit cost. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.



**TEXACO Lubricants, Fuels and
Lubrication Engineering Service**

TUNE IN . . . TEXACO STAR THEATER starring DONALD O'CONNOR or JIMMY DURANTE on television . . . Saturday nights, NBC.